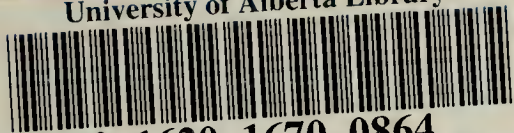


University of Alberta Library



0 1620 1670 0864

A32501



WASS

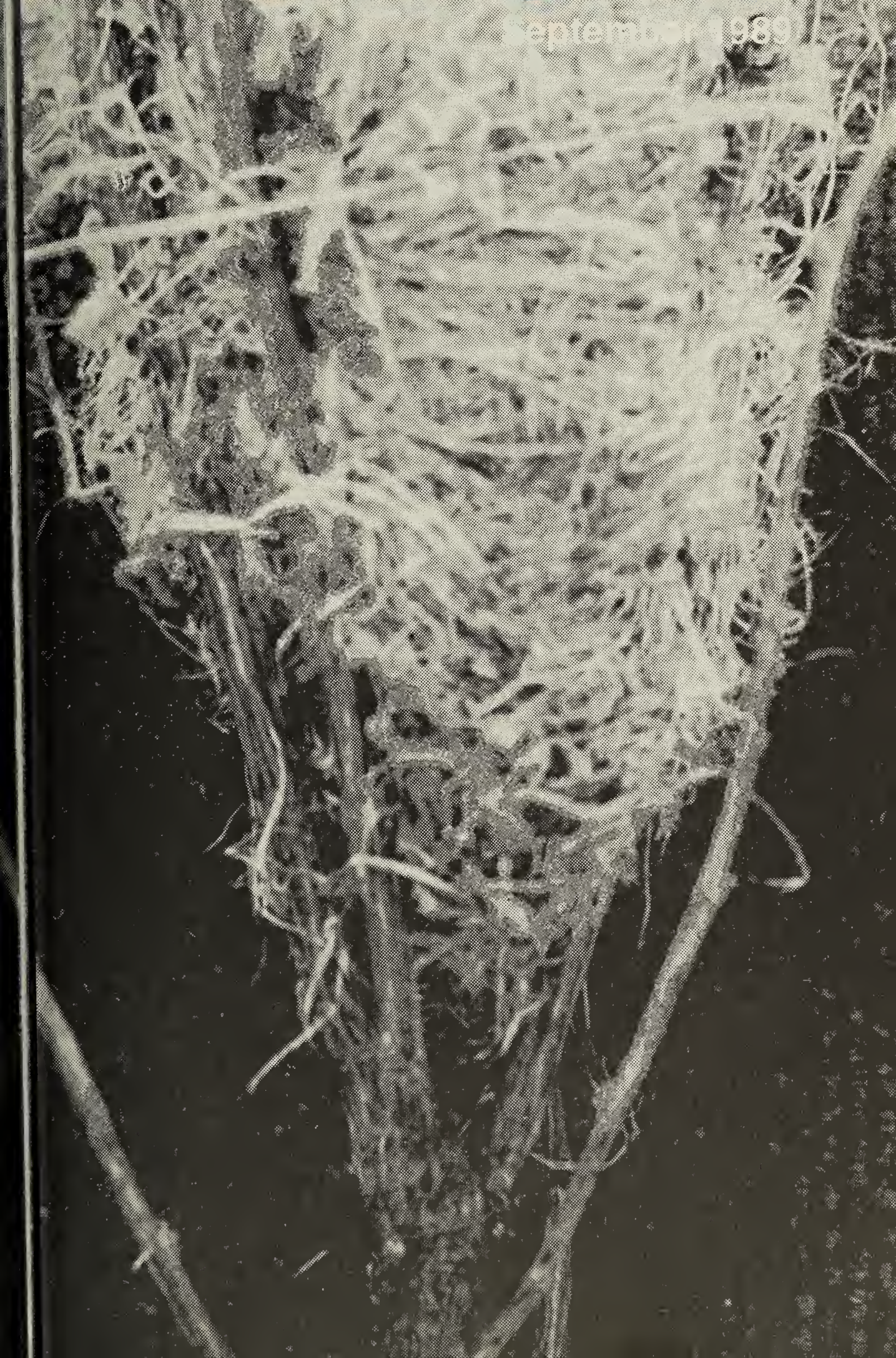


Digitized by the Internet Archive
in 2019 with funding from
University of Alberta Libraries

<https://archive.org/details/bluejay473sask>

BLUE JAY

September 1989



Blue Jay, founded in 1942 by Isabel M. Priestly, is a journal of natural history conservation for Saskatchewan and adjacent regions. It is published quarterly by the Saskatchewan Natural History Society, Box 4348, Regina, Saskatchewan S4P 3W6. ISSN 0006-5099.

Editor: Sheila Lamont

Associate Editors: Margaret Belcher, J. Bernard Gollop, Wayne C. Harris, Robert Hooper, John H. Hudson, Bruce A. McCorquodale, Robert W. Nero, Carol A. Scott

Editorial Assistant: Carman Dodge

EDITORIAL INFORMATION: All items for publication should be addressed to the editor at **Box 550, Raymore, Saskatchewan S0A 3J0**. Deadlines for each issue are 2 months prior to issue, i.e. 1 January, 1 April, 1 July and 1 October. Typewritten manuscripts should be double spaced and submitted in duplicate. Manuscripts may be submitted in text file form on IBM compatible 5.25 inch DSDD diskettes, which will be returned to authors when copies have been made. Please include a hard copy. For further guidance contact the editor.

Common names are used for species where possible. Bird names follow the latest revision of the American Ornithologists' Union Check-list. Mammals are from Banfield's *The Mammals of Canada* (1974). Since insect and plant names are not standardised, scientific names are included, with authorities where deemed necessary.

Photographs submitted should be on glossy paper. Negatives or slides sent will be returned after prints have been made for SNHS files. Prints will be returned on request. Deadlines for photographic materials are 4 weeks prior to issue, i.e. 1 February, 1 May, 1 August and 1 November.

Any material printed for the first time in *Blue Jay* may be reproduced without permission. Credit lines will be appreciated. Use of photographs requires written permission from the photographer.

ADVERTISING: Advertising rates may be obtained from SNHS, Box 4348, Regina, Saskatchewan S4P 3W6.

REPRINTS: Requests for quantities of reprints of any article in *Blue Jay* should be made to the editor with the submission of an article. Contributors wishing a few extra copies of the current issue may get them at cost. Requests for these should be made to the editor when material is submitted for publication.

SUBSCRIPTION-MEMBERSHIPS: Send all renewals, new memberships and correspondence concerning changes of address to **SNHS, Box 4348, Regina, Saskatchewan S4P 3W6**.

The classes of membership in the Society are as follows: Regular \$12.; Sustaining \$50.; Patron \$50.; Junior \$8. and Senior Citizen \$10. Sustaining and Patron memberships include the regular fee plus a donation for which a receipt is available, upon request, for income tax purposes. Bulk orders (minimum of 5 to one address) are available to members and educational institutions at the rate of \$12. for the first subscription and for each additional one. Life memberships are \$500. Outside Canada fees are \$

Cover: *Yellow Warbler nest, parasitized by a Brown-headed Cowbird, consists of two nests, one built atop the other. Lower and middle nests each contained a cowbird egg and warbler eggs. Upper nest was empty and the final outcome was unknown. Nest reported by Norman Opseth, Hagen, SK. Information compiled by Jim A. Wedgwood. Photo by Thelma Pepper, Saskatoon.*

MEMBERSHIP RENEWAL AND GIFT FORM

Name
Address City/Town
..... Postal Code

Type of Membership (please check)

Regular — Canada (\$12) ☐ Regular — outside Canada (\$15) ☐
Junior — Canada (\$8) ☐ Senior Citizen — Canada (\$10) ☐
Sustaining (\$25) ☐ An income tax receipt for Sustaining,
Patron, Life Memberships and Donations
(\$50) ☐ will be sent if you check here ☐
(\$500) ☐
I am a new member for 199..... This is a renewal for 199

Where to make a donation to: Conservation Fund \$ ☐
Heritage Marshes Fund \$ ☐
Other \$ ☐

Check above is receipt is required

Life Membership is payable at one time or over 5 years, or any shorter period
agreed.

Any amount over \$10.00 in excess of the regular membership of \$12.00 is viewed
as a **donation** for income tax purposes and a receipt for the excess amount will
be mailed if the appropriate box is checked above.

Group subscriptions to schools and clubs is \$12.00 for the first subscription and
\$10.00 for each additional subscription to the same address (minimum of 5
subscriptions).

Please send **Blue Jay Gift Subscription** to:

Name
Address City/Town
..... Postal Code

Check here if you wish us to send a card announcing the gift.

Type of Gift Membership (Please check)

Regular — Canada (\$12) ☐ Junior — Canada (\$8) ☐
Regular outside Canada (\$15) ☐ Senior Citizen — Canada (\$10) ☐

Send renewal form to **SNHS**

Box 4348, Regina, Saskatchewan S4P 3W6

Mail cheques and money orders payable to Saskatchewan Natural History
Society.

Do you know of any person interested in natural history and conservation who does
not receive *Blue Jay*? Please send the name and address and we will send a sample
Blue Jay and an invitation to join our Society.



Cheeky Unchicken Chickadee
— Karen Rispin

BLUE JAY

47 No. 3

September 1989

127-188

ACE HOGG, IN MEMORIAM. <i>Jim A. Wedgwood</i>	129
STUART HOUSTON OF SASKATOON HONOURED. <i>ry D. Gilliland and Ardythe McMaster</i>	130
W HOPE FOR GRASSLANDS NATIONAL PARK. <i>ry D. Gilliland</i>	132
TER FROM REDBERRY LAKE. <i>Connie Gramiak</i>	134
gi FAIRY RINGS IN GRASSLAND. <i>J. Drew Smith</i>	137
nts LARGEST COTTONWOOD IN SASKATCHEWAN? <i>Jim A. Wedgwood</i>	140
otiles MIGRATING SNAKES. <i>Jim A. Wedgwood</i>	143
s COMMON LOON KILLS DUCKLINGS. <i>Blaine E. McGrath</i>	145
WINTERING HORNED LARKS IN SOUTH SASKATCHEWAN. <i>Martin Bailey</i>	146
UNIQUE COLLECTION OF ORIOLE NESTS. <i>Jim A. Wedgwood, Thelma Pepper and Jim Pepper</i>	148
KENTUCKY WARBLER SINGING IN REGINA. <i>Frank H. Brazier</i>	152
VORY GULL IN REGINA. <i>Frank H. Brazier</i>	153
UCCESSFUL BREEDING OF BLACK-NECKED STILTS IN ASKATCHEWAN. <i>Graig D. C. Salisbury, Lorriene D. Salisbury and John R. Patterson</i>	154
AUGHING GULL IN REGINA. <i>Frank H. Brazier</i>	157
or Naturalists	158

Nature Library

ARCTIC DREAMS: IMAGINATION AND DESIRE IN A NORTHERN
LANDSCAPE. *Reviewed by Bob Kohlmeier*

TO WHOM THE WILDERNESS SPEAKS.

Reviewed by Mary D. Gilliland

EASTERN SCREECH-OWL IN SASKATCHEWAN

AND ADJACENT AREAS. *Christopher I. G. Adam*

EDITOR'S APOLOGY:

June 1989, inside front cover should have read: "*Yellow Immaculate Lily, Doris Silcox*. Funds to make this colour cover possible were kindly donated by Doris Silcox."

EDITOR'S THANKS:

Mary Gilliland, special editor for this issue, thanks the following Saskatoon volunteers for extra efforts in assuring its completion: Marshall Gilliland, Bernie Gollop, Stuart Houston, Thelma and Jim Pepper, J. Drew Smith, Jim Wedgwood, Jim Wood, Cathy and Kelly Wylie.

THIS ORGANIZATION RECEIVES FUNDING FROM



GRACE HOGG, IN MEMORIAM



Grace Hogg

W.S. Richards

Grace Hogg, a long-time Saskatoon member of the Society, died on May 13, 1989. Jim Hogg, her husband, predeceased her in 1976.

Grace taught school, her field being art, and she studied under several artists. She exhibited extensively, including provincial and national shows, and some of her works are held in foreign as well as Canadian collections. On occasion she made sketches for provincial and local Society events.

A delightful mix of the native and the exotic, her garden reflected an artistic eye and an inherent love of plants. Jim's interest in birds and Grace's in wildflowers, the pair were informed and popular leaders of local outings. More than once Grace was a helpful and a sub-leader on Society summer field trips.

Avid campers and lovers of the outdoors, they regularly attended summer meets from the beginning of these popular Society events in the 1950s, missing but two in 22 years. Grace and Jim were enthusiastic participants and willingly helped in the tasks necessary for such affairs to be successful. Together they devoted much time to each of their three main associations — the Saskatoon Art Centre, the Saskatoon Camera Club and the Saskatchewan and Saskatoon Natural History societies. Recently, Grace donated books to the provincial society.

In her own quiet way, through active participation and continuing presence, Grace, like other steadfast members who have passed on, nurtured and enhanced the Society. She was a cheerful friend of us all. — *Jim A. Wedgwood*, 610 Leslie Avenue, Saskatoon, Saskatchewan. S7H 2Z2

C. STUART HOUSTON OF SASKATOON HONoured

MARY D. GILLILAND, 902 University Drive, Saskatoon, Saskatchewan, S7N 1A5 and

ARDYTHE MCMASTER, 306 Brock Street, Winnipeg, Manitoba. R3N 0Y9

In the decades since he began helping Isabel Priestly publish the fledgling *Blue Jay*, Dr. C. Stuart Houston has received much recognition for his contributions to North American ornithology. His honours include the Canadian Wildlife Federation's Roland Michener Conservation Award and the Canadian Nature Federation's Douglas H. Pimlott Award, the latter awarded jointly to Stuart and Mary Houston "for outstanding and enduring achievement in wildlife conservation." When the Saskatchewan Natural History Society created a new class of membership, "Fellow," to mark long service and contribution to its work, Stuart and Mary Houston were among the first named.

In 1989, Stuart has been three times singled out for special recognition. He was elected a Fellow of the American Ornithologists' Union — 14th from Canada and the only amateur to be so recognised. The Society of Canadian Ornithologists named him recipient of its Doris Huestis Speirs Award, citing his many years of birdbanding and numerous papers and books — particularly those on naturalists of the Franklin expeditions, which have achieved international recognition and citations of excellence.

This year as well, the Manitoba Naturalists' Society presented to Stuart its prestigious Ralph D. Bird Award, for a lifetime of work for wildlife and conservation and for achievements reaching far beyond the Prairies.

Following are excerpts from the offi-

cial presentation, written and delivered by Ardythe McMaster, SNHS Regional Director from Manitoba.

"On the windswept grasslands of the Canadian prairies can be found the steps of a rare prairie species, the Prairie Naturalist... In the paths of the giants can be found impressive evidence of their talents for keen and careful observation, their abilities to recruit, organise and coordinate others to assist them and their energies to record and publish their findings. In their giant footsteps other naturalists may follow, their ways set by those who have gone before and shown the way.

"Once upon a time, as all good stories begin, when one Isabel Priestly moved...to Yorkton, she encouraged...to start a naturalists' club there... She began to write a small bulletin issued every four months... named her bulletin *Blue Jay*, after the noisy, lively, gossipy Thornton W. Massengale character, Sammy Jay, who roamed about the meadows and woods 'spreading the news.' Stuart Houston was just a kid growing up in Yorkton at that time. He was its first secretary-treasurer; he mimeographed the bulletin for circulation, and he and his buddies helped Isabel Priestly by crayoning the colour covers of her infant publication. What a start for these two young fledglings! *Blue Jay*, 'a journal of natural history and conservation for Saskatchewan and adjacent regions' has grown to become one of the outstanding natural history journals on the continent,

Stuart Houston, a regular *Blue Jay* contributor over the years, has grown to become this prairie giant we honour...known (like *Blue Jay*) across the continent...

"It would be true...to say that he works natural history in his spare time, but it could be...equally accurate to say that he breathes in his spare time! In broad terms he could be described as an ornithologist with a particular interest in raptors and colonial nesters, but this description would be too narrow, even though we know that he has banded about 5000 Great Horned Owls, and that the Houstons' total birds banded is just short of 100,000! He is keenly interested in the changing patterns of bird distribution, reflecting as they do the changing face of the prairies. He has researched and written about many early prairie naturalists and their work. His work increases our interest and heightens our appreciation for the rich treasure left by these pioneer men and women... In all Stuart Houston has published over 250 books on ornithological and natural history topics!

But how wrong...to think of [him] seated in his study typing out articles... picture him arriving home from the airport from a business meeting early on a Monday morning, gathering lunches, tools, shovels, and a herd of young chicks one third his age to spend the day waiting in nest boxes for Burrowing Owls a couple of hundred miles away. Or hanging nest platforms for Ferruginous Hawks or Ospreys. Or climbing up tall trees, or rappelling down steep cliffs, to retrieve raptor nestlings. Think also of [him] as the control centre for a huge network of people who work with and for him, a mentor who encourages and challenges, and who inspires by example...

Mary Houston...needs..mention here, as cook, clerk, stenographer, social secretary, deputy, research assistant,



*C. Stuart Houston receives
Ralph D. Bird Award*

data compiler, gracious hostess, companion and friend, she is the outstanding example of the woman behind the successful man, and Stuart himself would be the first to agree. A naturalist in her own right, Mary runs...bluebird nestlines, bands passerines in her backyard traps, and annually coordinates the Saskatchewan Christmas bird and mammal counts...

"As our Society honours Stuart Houston and his work...we recognise that both we and the award are honoured by the stature of the recipient...[who reminds us] of our heritage, our common goals, our potential, our challenge...[whose] footsteps [invite] us to follow, to get in on the excitement, to join in the fun. There is a giant among us: Stuart Houston."

NEW HOPE FOR GRASSLANDS NATIONAL PARK

MARY D. GILLILAND, 902 University Drive, Saskatoon, Saskatchewan. S7N 1

The New Agreement

For over 30 years the Saskatchewan Natural History Society (SNHS) has been a steadfast and strong advocate for protection of the original mixed grass prairie habitat of southwestern Saskatchewan through creation of a national park. In June 1981 an agreement was reached between the provincial and the federal governments to create such a park and land acquisition began. Two ranches totalling 140 km² were purchased in the Frenchman River area. However, governments were unable to reach consensus on such issues as oil and gas exploration and water management. Land purchase ceased while officials from the Federal Government and the Province dealt with very basic disagreements.

On 23 September 1988 Federal Environment Minister Tom McMillan and Saskatchewan Minister of Parks, Recreation and Culture Colin Maxwell signed a new document, a unique agreement under which Saskatchewan will retain control of watercourses within the park but will cooperate with the Federal Government to ensure that standards are compatible with those in surrounding park lands. This compromise resulted in large part from the efforts of a coalition of nongovernment conservation organizations, in which the SNHS was a major player.

The new park will ultimately consist of two blocks, totalling some 900 km². The proposed East Block includes the Killdeer Badlands and the West Block the Frenchman River country immediately southeast of Val Marie. Only a 340 km² core area will be acquired immediately; the remaining lands are currently privately owned or leased and thus cannot

be protected. The Saskatchewan government passed enabling legislation in August 1989, making it possible for acquisition to begin. Lands are being acquired on a willing-seller/willing-buyer basis over a period of some years. By mid-August 26 landowners had requested property appraisals and several had begun negotiations to sell. A superintendent and chief warden are in place in Val Marie.

There are issues still to be resolved and discussions continue among interested government and nongovernment agencies and individuals. Interim guidelines will delineate a strategy for integrated management of park lands during the initial period; SNHS and other interested parties will closely monitor their effectiveness.

Grasslands Trust Fund

At the September signing ceremony in Regina, Mr. McMillan announced the enthusiastic acceptance by the Federal Government of a proposal made jointly by the Canadian Nature Federation (CNF) and the Nature Conservancy of Canada to establish a trust fund for land acquisition within the new park. According to Paul Griss, Executive Director of CNF, this "experiment in cooperation among the private sector, the Federal Government and nongovernment agencies" will secure donations to be used for speeding up land purchase. All money raised will be used to purchase land—nothing will be spent on administration or other costs. Every dollar raised by the Fund will be matched by the Federal Government.

Lands acquired will be within the approved park boundary but outside the



Prairie Dog Butte, overlooking SNHS Prairie Dog Sanctuary,
Grasslands National Park

Fred Lahrman

al core area and thus not otherwise
under immediate consideration for
ection. The Canadian Parks Service
promote and publicize the project for
o-year period, CNF will undertake to
ain contributions, the Nature Conser-
cy will administer the fund and ar-
ge transfer of lands. Brochures have
n placed in all national parks and a
er produced for sale.

A \$2050 donation by SNHS, money
n the Endangered Species Confer-
e of January 1989 and from member
ations, officially launched the Trust
d in August 1989. The Honorable
en Bouchard, Minister of the Envi-
nent, was quick to extend his thanks
e Society for its response. His letter
s:

want to congratulate the members
he Saskatchewan Natural History
ety on their very generous contribu-
to the Grasslands Trust Fund, which
presented at the annual meeting of
Federal-Provincial Parks Council in
ina. The Society's charter donation
2,050 is a clear statement of support
he protection of mixed-grass prairie
the establishment of Grasslands
onal Park.

The Trust Fund is an innovative, co-
operative project of the Canadian Parks
Service, the Canadian Nature Federa-
tion and the Nature Conservancy of
Canada. It is designed to test the willing-
ness of the public to contribute finan-
cially to the national parks system, and to
raise awareness of the plight of one of
Canada's most endangered habitats.
Your early and substantial support can
only enhance the ability of the program
to meet those objectives."

Donations are being received from
across Canada as individuals and groups
become increasingly aware of the deci-
mation of prairie habitats. Quick to help
preserve rain forests in Costa Rica, Brazil
and elsewhere, Canadians are now tak-
ing advantage of this unique opportunity
to contribute directly to the protection of
one of the most fragile and most endan-
gered habitats in this country and on this
continent.

**Readers may contribute to the
Grasslands Trust Fund through the
Canadian Nature Federation, 453
Sussex Drive, Ottawa, Ontario K1N
6Z4. Contributions are tax-deduct-
ible and a receipt will be issued.**

LETTER FROM REDBERRY LAKE, FALL 1989

CONNIE GRAMIAK, Box 432, Hafford, Saskatchewan. S0J 1A0

Editor's note: *Details of a resort development proposed in 1985 for Redberry Lake's southwest corner were presented in Blue Jay 44:213-221. The Saskatoon Natural History Society, supported by the Saskatchewan society, joined the Redberry Environmental Group in opposing the project and has continued the fight for 4 years. The Saskatoon society commissioned a detailed background study by Bert Weichel, which was used for formulating the group's position papers and for a later formal Ecological Reserve proposal for part of the disputed area.*

The developers' application was finally refused, their subsequent appeal denied and the project eventually dropped. Assisted by Saskatchewan Rural Development, the R. M. of Redberry hired Beak Associates to do a lakeshore management study. Their recently released report emphasizes strongly the critical importance of Redberry Lake for wildlife and the need to incorporate that knowledge into any plans for increasing tourism and other human activity.

Over 188 bird species have been recorded in the Redberry Lake Federal Migratory Bird Sanctuary. Redberry's islands support nesting colonies of Ring-billed and California gulls, American White Pelicans, Double-crested Cormorants and Common Terns. Piping Plovers breed on its islands and shoreline. A large number of White-winged Scoters breeds there. These species all rely on isolation for successful nesting. An estimated 30,000 ducks regularly rest and feed there on migration, as well as large

numbers of geese and swans. There are also substantial upland populations of such native prairie mammals as White-tailed Deer, ground squirrels, Coyotes, Red Foxes and Badgers. Extensive plant studies have not yet been carried out, but early sampling indicates still remnants of ungrazed native Fescue-Spear Grass-Wheat Grass prairie and unusually diverse shrub/forb stands, some at least uncommon in the region.

Connie Gramiak has been an active voice for preservation of Redberry Lake from the beginning of the controversy.

Fall 1989

Dear Natural History Society,

It's time for an update on events at Redberry Lake. The final report on the Lakeshore Management Study conducted by Beak Associates was recently presented to and accepted by the local steering committee. The R.M. of Redberry has been carrying out the study over the past 2 years with the assistance of Saskatchewan Rural Development. Management guidelines based on the report will become a framework for a zoning bylaw for the lake.

The report best states its own objective: "Redberry Lake shall be developed within a sustainable environment-recreation concept which emphasizes protection of wildlife as a basis for successful and long-term recreation development on Redberry Lake. The land allowed at Redberry Lake shall therefore reflect the sensitivity of the wildlife and the potential of the land and water for recreation."



Redberry Lake

Thelma Pepper

This objective offers a compromise between development and conservation based on the currently popular idea of sustainable development. It will be very interesting to see whether this planned compromise offers a workable solution to competing land/water use claims made by individuals and groups with differing perceptions and philosophies about the natural world and our place in it. Those of you interested in the idea of sustainable development might want to keep a close eye on Redberry for the next few years to see whether it can indeed accommodate both our own species' needs and desires and the needs of wildlife for maintenance and perpetuation. If this model proves workable we'll all be happy. Does not....?

Don't want to get too complicated in explaining Beak's recommendations but, because the report attempts to integrate development and conservation, it is necessarily complex. The study distinguishes five ways in which shoreline areas can be used.

1) **Protected areas** allow no development. Human access is strictly controlled.

2) **Conservation areas** do not allow any development, but they do admit greater human use. Picnicking, viewing platforms, walking trails and the like are envisaged for these areas.

3) **Country residential** areas allow for individual ownership of 40-acre lots but control access and land and water use.

4) **Intensive cottage and recreational use** is allotted to two lakeshore areas.

5) Some **agricultural use** is allowed in specified areas.

According to the plan, the whole lake is divided into four quadrants, each embodying a prevailing land use designation. The *northwest* quadrant containing the Regional Park is designated the primary recreational area, allowing for the most intensive cottage and recreational development. A small conservation area is included in this section. The



Double-crested Cormorant colony

Juhachi Asa

southeast quadrant, which includes the Bible Camp and a 20-cottage lot subdivision, is designated a secondary recreation and country residential area. It contains significant protected and conservation areas important to Piping Plover and other migratory birds.

The *southwest* quadrant, including Gramiak Peninsula and all but one of the lake islands, is designated the primary conservation area. The report recommends establishment of an Ecological Reserve here. No development is allowed in this quadrant though conservation areas allow for some human activity. The *northeast* quadrant is designated a secondary conservation area and includes protected, conservation and country residential categories.

The many boundaries between these differing land use designations look neat and rational on the maps included in the report. They are, of course, largely imaginary, since, if one is walking along the lake, nothing will indicate when one has passed from one designation to

another. The lake area remains an ecological whole and whether each species, including our own, stays and behaves wisely within the allotted designations in the recommended way remains to be seen. Extensive signage and considerable educational effort will be required to acquaint at least our own species with the rationale behind the designations. Will it be possible to persuade us all that caution may sometimes be more important than curiosity?

A boat operator began giving tours of the lake this summer and plans to continue next year. The boat leaves from the Regional Park boat launch. I also hear there are Big Plans to enhance tourism possibilities for Redberry Lake in a more venturesome way. I'm sure we will hear more about this in months to come. Tourism is increasingly seen as one of the few means available to diversify rural and small town economies.

Bye for now,
Connie Gramiak

FAIRY RINGS IN GRASSLAND

DREW SMITH, Department of Horticulture Science, University of Saskatchewan, Saskatoon, Saskatchewan. S7N 0W0

Fairy rings can be found in grassland in most parts of the world, although they also occur in many other habitats. Most prairie lawn owners are familiar with these slightly rings or arcs of dark green grass and associated fruits (mushrooms, toadstools or puffballs) in lawns.

Supernatural agents were often cited as the causes of fairy rings before their biology was understood. William Shakespeare ascribed them to the "little people," but he also noted the association between the rank rings of grass and mushrooms (toadstools) which seemed to spring up very quickly:

Prospero: "you demi-puppets that
By moonshine do the green sour
ringlets make,
Wherof the ewe not bites; and you
whose pastime
Is to make the midnight mushrooms"
(*Tempest*, Act 5, Scene 1)

In Europe also there was a commonly held belief that elves caused them: "They [elves] make so deep an impression on the earth that no grass grows there, being burned with extreme heat... the rings are most frequently seen by moonshine; then they dance their rounds in the high grass." (Olaus Magnus in *History of the Goths* (1628))

Other mythologies associated their formation with assemblies of witches on Walpurgis Night. In Germany, fairy rings are named after these witch ring dances—"hexenringen"—and in the Tyrol they are said to be due to scorching by a fire-breathing dragon passing over the field (an early report of UFOs ???). In Holland

they were thought to mark a spot where the Devil's butter churn had rested. Celtic belief associated them with worship cults.

Fairy rings in pastures, meadows, lawns, golf greens and fairways are usually caused by fungi, and most belong to the Class Basidiomycetes. There are three kinds of ring-formers: **Grassland ring-formers** are true soil-inhabiting fungi which use as a source of nutrients the accumulated organic matter in the soil. **Woodland ring-formers** are often ectomycorrhizae which parasitize and form sheaths on roots of trees growing in grassy areas. These are rings "tethered" to the tree roots and they produce their fruiting bodies above ground. One species in Saskatoon is associated with birch roots. **Waste colonizers** are fungi which grow on pieces of wood buried in the soil or on dead tree roots and their fruits also develop above ground. When their food supply is exhausted they cease fruiting. They can cause problems on new building sites or after incomplete removal of tree roots.

Some species usually produce their fruits in rings or arcs, whereas the fruits of other potential ring-formers are often solitary or grow in troops. Rings are formed because the fungus body (mycelium, consisting of tubular threads of cells) grows in a radial direction from a point source of infestation. The ring may break down into arcs because of physical, nutritional or microbiological barriers in the soil. When environmental conditions are suitable, the fungus fruits around the ring circumference. This often takes place in summer or fall after the weather

has been wet and warm and the fungus has accumulated adequate food reserves. The fruits produce myriads of microscopic spores, which are formed on gills or in tubes on the undersurfaces. These spores are the main method by

which the fungus reproduces and spreads.

Many of the species which grow in rings do not have visible effect on vegetation other than producing a ring

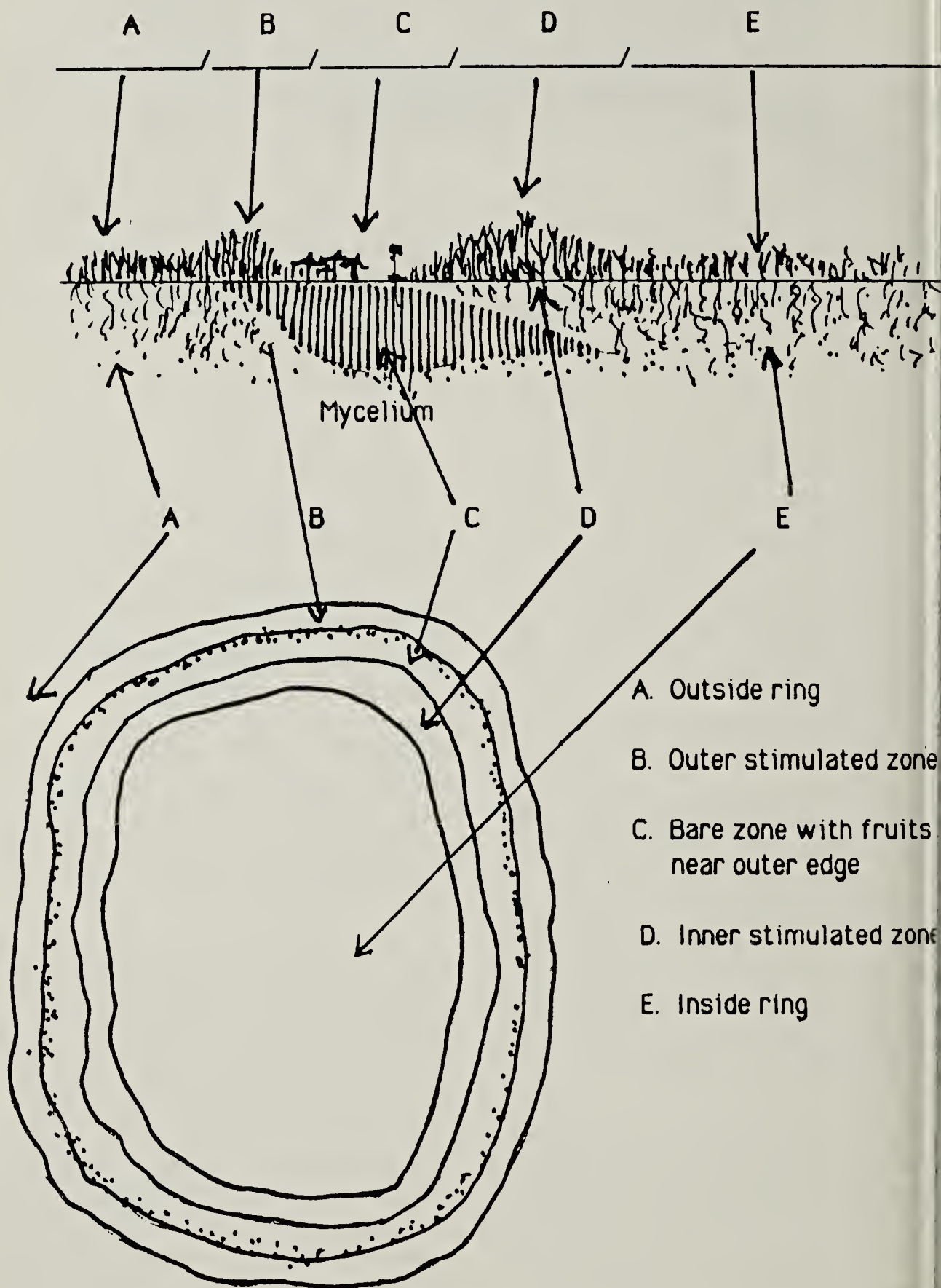


Figure 1. Vertical section (upper) and plan (lower) of a fairy ring caused by *Marasmius ordesii*

fruits. Some, like the common field mushroom or some puffballs, have an associated ring, arc or ribbon of stimulated (darker green) grass growth. The **Fairy Ring Mushroom**, the most common cause of the unsightly rings in lawns of the Prairies, is called *Marasmius oreades*. A 1972 survey in Saskatoon showed the heaviest infestation in domestic lawns 6-15 years old. Of 270 lawns in this age group approximately 80 per cent exhibited *M. oreades* rings. This declined to 2 per cent in lawns over 20 years old. Eventually rings are blocked by obstructions or by another ring of the same species.

In fairy rings caused by *M. oreades* the distinct rings are often visible (Figure 1). There is an outer ring (B) of stimulated green grass, a bare zone (C) where grass growth is absent or sparse with a ring of tan-coloured fruits around its perimeter and an inner green zone (D) where grass growth is luxuriant. The stimulation of the outer zone results from the liberation of nitrogen from the organic matter by the fungus as it grows. This nitrogen is taken up by the grass. The bare zone is formed mainly because of the dense growth of water repellent mycelium of the fungus, which resists drought conditions. The soil of the bare zone may have a strong, mouldy smell and the greyish-white mycelium of the fungus may colonize the soil deeply, usually the fungus is most abundant in the top 5 cm. The inner green zone is where the fungus mycelium in the soil is being decomposed by soil microorganisms yielding nitrogen, which stimulates grass growth.

M. oreades will not grow back through

soil it has colonized, at least for several years. Where *M. oreades* rings make contact they eliminate each other. When the rings of other fairy ring fungi meet they may eliminate each other or continue to grow through each other, or one or both may be obliterated. In growing through the soil, *M. oreades* exhausts the nutrients it needs and leaves self-inhibitory waste products (metabolites) of its own growth. Several of the microorganisms in uninfested soil have been shown to be antagonistic to *M. oreades*. This discovery has been used to develop a biological control method for *M. oreades* rings by mixing ring and non-ring soil. Other non-chemical methods are available for suppression and elimination of ring symptoms in lawns. Elimination of the fungus by fumigation with volatile fungicides is possible, but not suitable for the homeowner. Recently, effective elimination of the fungus has been achieved in Saskatchewan tests in some cases with experimental fungicides applied as soil drenches, but none of the chemicals is registered for use in Canada.

For further information

RAMSBOTTOM, J. 1953. Mushrooms and toadstools. (New Naturalist Series). Collins, London. 306 pp.

SMITH, J. D. 1980. Is biologic control of *Marasmius oreades* possible? *Plant Disease* 64(4):348-354.

_____. 1988. Control of fairy rings in amenity turf. Garden Line, University of Saskatchewan (966-5865). 7 pp.

_____, N. JACKSON and A.R. WOOLHOUSE. 1989. Fungal diseases of amenity turf grasses. E. & F. N. Spon, London and New York. 401 pp.

LARGEST COTTONWOOD IN SASKATCHEWAN?

JIM A. WEDGWOOD, 610 Leslie Avenue, Saskatoon, Saskatchewan. S7H 2

Several years ago, my wife Shirley and I came upon a large cottonwood tree in the valley of the North Saskatchewan River near Petrofka. By no means were we the first to notice the big tree, for there was a path through the bush to it and the surrounding ground was trampled bare. Obviously, impressed by the tree's girth, many people before us had walked around and posed beside it.

Situated 5 1/2 miles south and 6 1/2 miles east of the junction of Highways #12 and #40 at Blaine Lake, the tree is on the valley bottom about 220 yards from the west shore and 25 yards north of the old Laird ferry crossing trail, legal description SW31-43-5-W3, on Crown land leased to Sam Popoff.

In 1985 I led a group of senior citizens to the site, where enthusiasm upon seeing the massive trunk brought comments: write it up in *Blue Jay*—challenge others to report any larger cottonwood in the province — Saskatchewan should formally recognize distinctive trees. This note addresses these matters.

During that field trip, Paul Coutu approximated the circumference as 15 ft. 6 in. A later measure of girth was 16 ft. 1 in. at the standard height of 4.5 ft., yielding a diameter at breast height (dbh) of 5 ft. 1 in. The bark was about 4 in. thick. Equally impressive is the Popoff tree's spread. From Jerry Horbay's photographs made for proportioning purposes, the span was fixed at 104 ft. 6 in. and the height at 68 ft. 8 in. Form is that of a mature plains cottonwood: massive

trunk, wide-spreading branches, modest height, a shape broad and flat at the top. Age.¹

This tree could not have inspired J. R. Kilmer to create his memorable poem "Trees." Unsymmetrical it is, branches longer on one side than another, a few sagging to the ground then turning up, several branches bending grotesquely, the upper trunk misshapen. Beauty it has none; character it has in plenty.

The tree is a cross between the plains cottonwood (*Populus deltoides* Mill. var. *occidentalis* Ryds) and the black balsam poplar (*P. balsamifera* L.) as identified by Stan Rowe, and this fairly common cross is a named hybrid *jackii*. In the stand, which extends a short distance along the trail as well as along the riverbank, there are pure cottonwoods, balsam poplars and other hybrid cottonwoods. In addition to identifying *P. jackii*, Vernon Harms noted a back-cross between hybrid cottonwood and balsam poplar. Up- and downstream from the site are other riparian stands of large trees, none of which, however, approaches the Popoff tree in size.

The stand's understory is mainly osier dogwood, a sign of good moisture conditions, the cottonwood's requirement, with highbush cranberry and rose. Much of the valley bottom is cultivated.

The big tree is probably 150 years old, maybe 100 years, in Stan's judgment. Some plains cottonwoods in the area are 80 to 100 years of age.

Originally the tree was on the west side of the island. When initiated in 1909, the crossing was a two-ferry operation, the first ferry running between the river's west bank and the island and the second between island and east bank. In 1941 a dam — the grade of the present trail — was built across the west channel, that channel becoming cultivated land. The trail was closed in 1961. When heavy spring floods occur, as in 1987, water overruns the area, including the site, as debris marks attest. Sam Popoff notices a difference in his crops and believes it is natural fertilizing akin to the periodic flooding of the Nile. All these geographic features were evident when they pointed them out.

The soil on the site, according to Gary Meyer, who examined our sample, is a light, fine-textured, typical loam. Given adequate moisture conditions, it would be good growing soil, as it drains well.

These historic and current conditions suggest that the growing environment was excellent in the tree's initial period of life, and it was still good later, although not as beneficial as formerly.

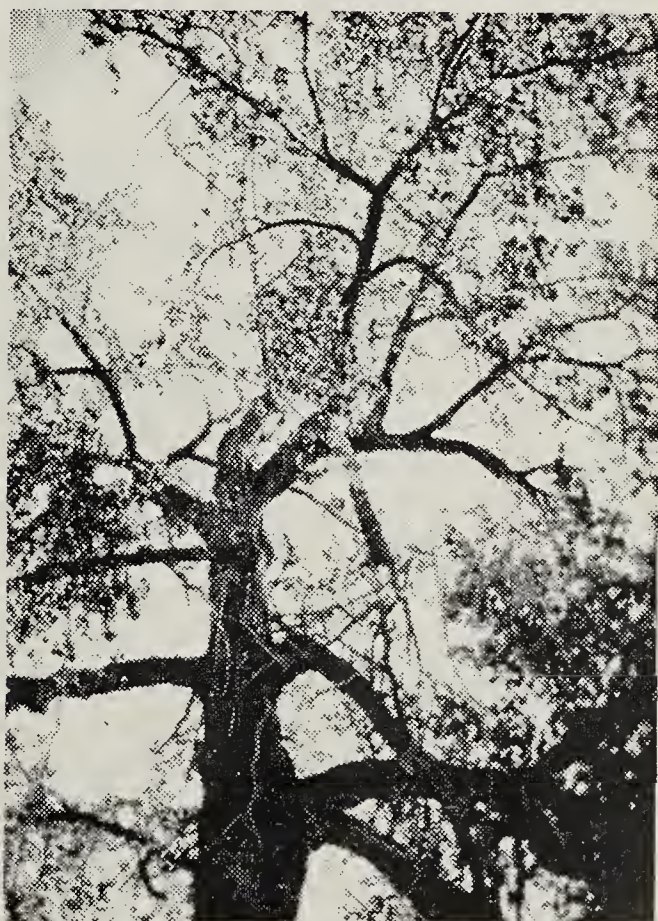
Considerable is known about events at the tree itself. The large depression to the north is an old borrow pit, soil being taken from here to build the trail grade across the old channel. Excavation to within 15 ft. of the trunk likely damaged roots. The ferryman's house once stood about 30 ft. to the south of the tree, its site still detectable. These two events suggest reasons for the paucity of branches on the two sides. To add insult to injury, the ferryman shot a bear out of the tree in 1937.

A small hole in the trunk was of special interest. Recently Sam removed from it a spout installed many years ago to gather sap in springtime.



Sam Popoff at tree

Dieter Martin



Trunk and branches

Jerry Horbay

At first glance from the trail, the tree appeared healthy, but it may be within 20 to 30 years of the end of its life. Close examination revealed poor condition. Many tips of upper branches are dead, possibly an effect of the drought of the 1980s. Several branches lie scattered around the tree, portions of some limbs are dead and bare of bark, a major limb high on the tree is split and the top of the trunk has been broken off. Decay was noticed by Dieter Martin at several places along the trunk.

The tree appears to have been spared brush fires, though one came close in 1989. Two attempts have obviously been made to start fires at the base (vandalism?), fortunately without success. (Several large charred snags scattered about are from land clearing on the opposite side of the trail.)

To me, two questions about this tree have always been: why so big and why just one? The factors discussed above go only part way toward providing answers.

A third question is: how did the tree escape the axe in the early 1900s? The opening of the ferry at that time provided access to the site. Incoming settlers on both sides of the river in those years, but especially on the west side — a Doukhobor village was abuilding only a mile away — would have placed heavy demands on trees for a variety of purposes. My hypothesis is that the Popoff tree was its own protector. At some 70 years of age, destined to be large, and favoured by excellent growing conditions, it was already big — the placement of the ferryman's house hints of that — too big for the cutting, transport and milling capacity available to remote settlers.

In 1984 the Saskatchewan Forestry Association launched a project to identify notable trees and the next year pub-

lished its first edition of "Saskatchewan Trees of Renown."² Candidate trees were those "that have gained prominence for some reason." Listed in a section on trees of record diameter are two specimens — the larger one is the Popoff tree. In the location description the Laird ferry is incorrectly named Doukhobor ferry. The diameter reported for the trunk is practically the same as the Popoff tree's. The species is stated to be balsam poplar. Included in the entry is the qualification that the Committee has not yet verified the record.

The Association contemplates production of a second edition of "Saskatchewan Trees of Renown." It is urged to continue its Trees of Renown program, giving it a higher profile and augmenting the stature of recognition. The meritorious program needs more publicity.

Some American states have established formal recognition procedures for outstanding trees. For instance, the legislature may designate a notable tree as a state tree and an appropriate fence and monument may be erected. In certain jurisdictions in West Germany, once a tree surpasses a certain size, it enters the public domain in a sense and, though privately owned, may not be cut down without approval. We may not be ready for or even want these processes, but we do need, and I believe we are ready for, the next level of recognition and preservation above those in the Association's program.

The Saskatchewan Natural History Society should actively cooperate with the Association in respect to this program, which is but one of many facets in a conservation ethic.

Sam Popoff was a gold mine of information on the natural and human history of the Popoff tree and its environs. His family roots on the farm go back to 1905

and he has a genuine interest in the people and the countryside in his district. I am grateful for all his help.

I appreciated: the information Stan Rowe provided on identification, age and biology of the big tree and the comments he made on drafts of this article; the special photography undertaken by Perry Horbay and the opinions offered by Peter Martin about the condition of the tree, and for his photos. I acknowledge the information provided by Marie Grono,

Manager/Secretary, Saskatchewan Forestry Association; by Vernon Harms, Curator, The W. P. Fraser Herbarium; and by Gary Kruger, Saskatchewan Soils Testing Laboratory.

¹HOSIE, R. C. 1969. Native trees of Canada. Queen's Printer, Ottawa. 380 pp.

²LEE, C. A., S. ROWE and D. B. WILLIAMS. 1985. Saskatchewan trees of renown. Saskatchewan Forestry Association, Prince Albert. 36 pp.

MIGRATING SNAKES

M. A. WEDGWOOD, 610 Leslie Avenue, Saskatoon, Saskatchewan. S7H 2Z2

An unusually large total of 11 garter snakes was seen while I was driving from farm to farm in the Norquay district during the afternoon of September 12, 1989, the first warm, sunny day in 3 weeks.

The snakes were on three 1.6- 4.8-km stretches of north-south roads: a paved highway 1.6 km west of town, a gravel road 1.6 km northeast and a dirt road 3.2 km southwest. The six live and four road-killed snakes were all going or heading east. About 3 hours elapsed between first and last observations.

Given the weather pattern, the number of snakes and especially the consistent apparent direction of travel, the

surmise was that a migration was occurring across a front at least 8 km wide. (With that number of snakes, if movements had been merely local, including sunning on the road, one would expect direction to have been random.) Since the sightings were spread over 3 hours, probably many more than 11 snakes were present, some having already crossed, others not yet having reached a road when I happened by.

According to Wayne Lynch, garter snakes in Manitoba's Interlake region may migrate as much as 18 km from hibernacula and move back to winter quarters in the first half of September.² Bernie Gollop recalled an old report of a hibernaculum near Pelly, Saskatchewan,

which is 11.2 km east-southeast of Norquay and David Baron advised that records in the Saskatchewan Museum of Natural History showed this hibernaculum to be about 4.8 km northwest of Pelly. The sightings ranged from 8 to 14.4 km from this point and were within 22° of due west of it. (If angularity had been much greater, some snakes would have been spotted on east-west roads, but none was.) A fall migration was probably in progress and the garter snakes were likely headed for the Pelly hibernaculum.

By the third sighting I was paying particular attention to status, location and direction. It had reminded me of a similar group of observations 2 years previous: three live and two road-killed garter snakes along some 6.4 km of Highway #35 between Wadena and Elfros, all moving or pointing east. (That the direction was the same for all snakes in each of the Norquay and Wadena groups was significant; that it happened to be east both times was likely coincidental.) As at Norquay, the day was warm, following a lengthy spell of cool, damp weather. With the Norquay experience behind me, I now believe the 1987 observations were possibly of another hibernaculum-bound movement.

Recalled too by the Norquay event was the Arelee area woman who in 1988 remarked on the number of snakes around her farm that year. A question

arises — has the 1980s drought had any bearing on local garter snake populations? The possibility that numbers may increase during a drought was raised by George Hearn, a Rosetown area farmer when commenting on conditions during the 1930s:

"I don't know if the dry weather had anything to do with garter snakes or not, but I remember that during one of these years, there was a outbreak of garter snakes. They would come around the house and, if they got a chance, would sneak in and sometimes get in under the cookstove, which would just about send my mother into orbit. They were so thick that on a calm day, if you stood still and listened near the buckbrush, you could hear them crawling through the grass and branches."¹

The Museum maintains a record on flora and fauna. One item of primary interest is snake hibernacula phenomena. Anyone with information is invited to report details to the Life Science Unit, Saskatchewan Museum of Natural History, Wascana Park, Regina, S4P 3T7.

¹CURTIS, J. L. 1988. Camberley and Cleland school districts. Camberley and Cleland Story Book Committee. 174 pp.

²LYNCH, WAYNE. 1983. How Manitoba garter snakes survive our winter. *Canadian Geographic* 103(2):26-29.

COMMON LOON KILLS DUCKLINGS

LAINE E. MCGRATH, 328 Maddock Way N.E., Calgary, Alberta. T2A 3X6

On Friday, 21 July 1989, between 8:30 a.m. and 9:00 a.m. at Chitek Lake, Saskatchewan, while in the field with more Friesen to identify birds in the area, I witnessed a behavioral aspect of Common Loon that neither of us had seen before. While we were attempting to move in closer to a pair of flycatchers perched in some shrubbery overhanging the water, an adult duck, exhibiting signs of distress, was spotted out on the lake. On closer examination with binoculars, she was identified as a Mallard and appeared to be showing signs of distraction display.

While we were watching her, four

downy ducklings came into view. The young birds, at the urging of the female, were headed out toward the centre of the lake as fast as their little legs would take them. This behaviour seemed odd at the time because there did not appear to be anything near them that would cause such distress. As we continued to watch them, something created a splash in the water and the duckling at the rear of the group disappeared under the water. Shortly after its disappearance an adult loon surfaced and pounced on top of the third duckling, taking it under the water. This was repeated for the second and first young Mallards as they were frantically trying to escape. As this was taking



Common Loon

B. De Vries

place, the adult Mallard attempted to protect her young from the loon's attack by rushing towards it and flapping her wings. However, her efforts were in vain as it was evident she was much smaller than the loon.

The first three ducklings did not reappear after going under. However, the last one, which had been the first in the line of escape, rose to the surface inverted, its feet frantically fanning the air until eventually no motion was evident. The loon remained close to the scene while another loon joined it. Both loons floated casually in the area while preening themselves as the dead young bird floated on the surface 2-3 feet away. The female Mallard made several passes as if in search of her young, eventually giving up and moving off to another part of the lake. There were no signs of young loons with the adults and there was no evidence to indicate that the loons had fed on the dead birds. Upon our departure the loons remained in the area of the attack.

There are other instances of loons killing birds. In Europe, Common Loons were seen eating young Common Darters.¹ In New Hampshire, a group of unmated loons attacked and killed loon chicks.² Candace Savage reports that the Common Loon diet, in addition to fish, also "includes crustaceans, amphibians, and, occasionally, the young of other water birds."³ In the Northwest Territories, an Arctic Loon had a furious fight with a Canada Goose defending its nest. The full length of the loon's bill entered the goose, puncturing its lung, and killing it.

¹JONES, R. N. and M. OBBARD. 1903. Canada Goose killed by Arctic Loon and subsequent pairing of its mate. *Auk* 87: 371.

²KLEIN, TOM. 1985. *Loon magic*. Fennell Press, Ashland, WI. 145 pp.

³SAVAGE, CANDACE. 1985. *The world of Canadian birds*. Western Producer Prairie Books, Saskatoon, SK. 211 pp.

WINTERING HORNED LARKS IN SOUTH SASKATCHEWAN

MARTIN BAILEY, 3634 McCallum Avenue, Regina, Saskatchewan. S4S 0S5

The Big Muddy Christmas Bird Count was first undertaken in 1988; the Bromhead count is now in its 3rd year. While the topography of the two circles is different, the centers of these counts are less than 100 km from each other, and both are less than 30 km north of the 49th parallel.

The 1988 counts occurred on 28 December for Bromhead; and 29 December in the Big Muddy circle. The

weather in both areas was essentially the same. Both days were sunny with a little cloud. Temperatures ranged between -20° and -15° C under light conditions.

Golden Eagles, Snowy Owls, Partridges and Ring-necked Pheasants were observed in both areas. Sharp-tailed Grouse were conspicuous by their absence at both sites.



Horned Lark

Gary Seib

Of particular interest was the count of Horned Larks. Over 2000 individuals were noted in the Big Muddy circle. All were members of the paler prairie subspecies. On the other hand, in Bromhead 10 birds were counted, all members of the darker northern subspecies. Based on these limited observations an hypothesis might be proposed. Over the winter months prairie Horned Larks retreat to the more broken and sheltered areas afforded by the buttes and coulees of the Big Muddy. The northern subspecies is content to head south of their summer range, settling for the winter on the open flats of the Saskatchewan prairie that typifies the Bromhead circle.

Comments on these observations by other observers would be appreciated.

Editor's note: While it is tempting to try identifying subspecies in the field, it is not usually successful. In the case of Horned Larks, Godfrey lists three races that breed in Saskatchewan and the Arctic but gives no descriptions of plum-

ages.¹ Scott illustrates five subspecies, only one of which breeds (occurs?) in Saskatchewan (enthymia).³ Peterson has oversimplified the situation by illustrating two forms, "northern" and "prairie" which actually include other subspecies from the east.² In addition, there are subtle plumage differences in age and sex. Because "light" and "dark" will vary from observer to observer, it is more important to pay attention to throat, forehead and eyeline colours. However, while differences in plumage may be evident, interpretation of the origins of the birds may not be practical.

¹GODFREY, W. E. 1986. The birds of Canada. National Mus. of Canada, Ottawa. 595 pp.

²PETERSON, R. T. 1980. A field guide to the birds east of the Rockies. Houghton Mifflin, Boston. 384 pp.

³SCOTT, S. L. 1987. Field guide to the birds of North America. National Geog. Soc., Washington. 464 pp.

UNIQUE COLLECTION OF ORIOLE NESTS

JIM A. WEDGWOOD, 610 Leslie Avenue, Saskatoon, Saskatchewan, S7H 2Z2
Photographs by THELMA and JIM PEPPER, 1015 Temperance Street,
Saskatoon, Saskatchewan. S7N 0N5

In the late 1940s, the Opseth family, Hagen district farmers, started collecting oriole nests, and Otto Opseth now continues the practice started by his sister. Most of the nests are from an aspen grove surrounding the farmhouse.

Settlers in northeastern Saskatchewan often first cleared a small opening in the bush for a farmyard. Then, when breaking the land, they left the trees surrounding the yard standing, thus providing a ready-made shelterbelt. Many of these belts remain and typically house a pair of orioles, a couple of crested flycatchers and one or more pairs of hummingbirds, among other species. With two-thirds of a total yard area of 12 acres being treed, the Opseth place follows this pattern.

Orioles have nested every year. When he was younger, Otto used to climb the tree at the end of the season to get the nest. Later he tried shooting off the branch, a largely unsuccessful venture. Now he cuts down the tree — "they need thinning anyway" — hoping to beat the magpies, who tear open the nests looking for parasites. In one nest fleas lined the bottom to a thickness of 1/8 in.

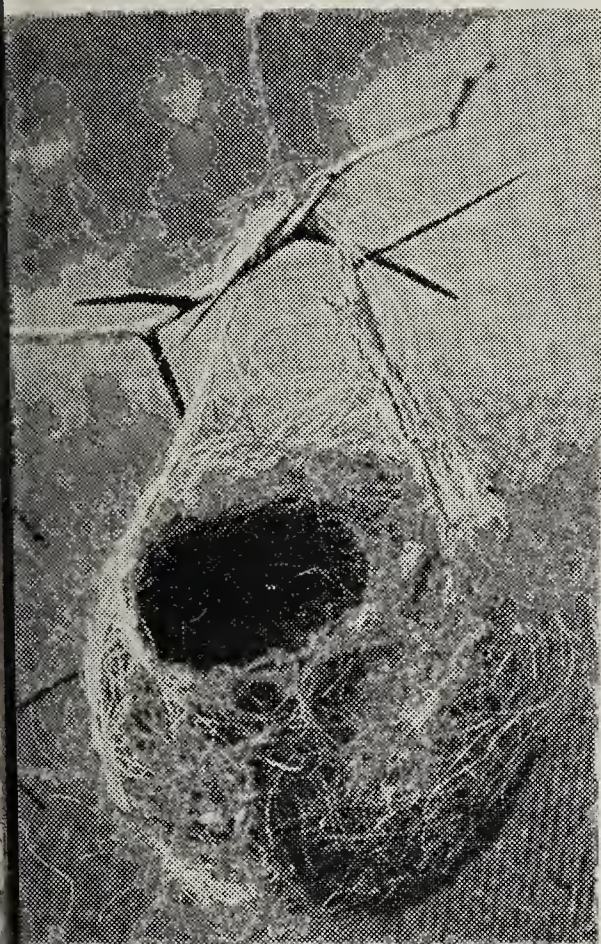
Otto displayed the nests when Thelma and Jim Pepper led a group of field-trippers to his farm in 1988. The Peppers and I went back in October 1989, they to photograph the nests, I to study them. The nests selected were about a third of

the collection and are representative of nestbuilding techniques and factors influencing them.

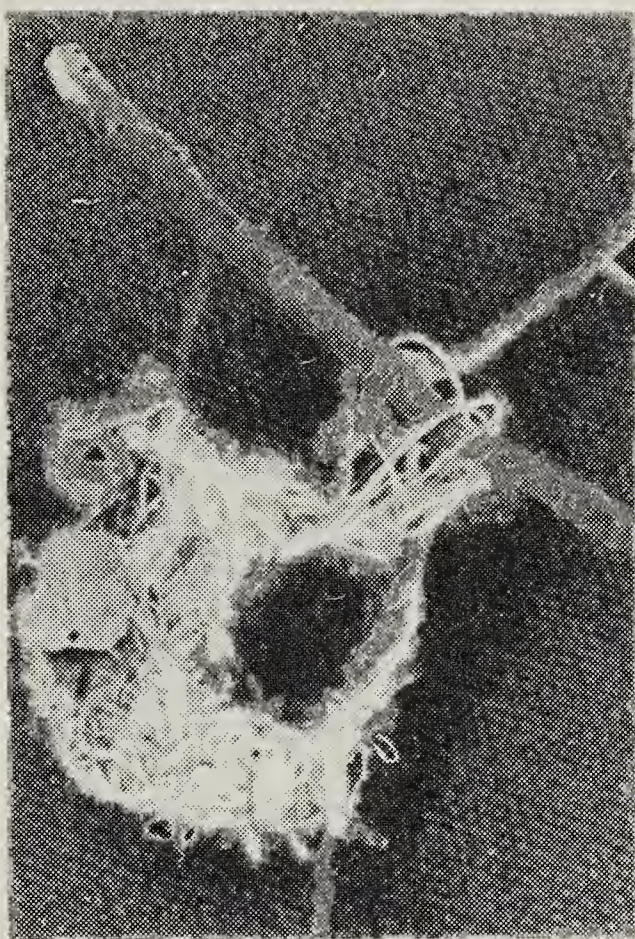
The customary placement of the nest was high in a tall tree, but in the case of Nest I the choice of a hawthorn bush meant a much lower nest. Nest VI (photos) was also in a shrub, at 10 ft., the only other low nest in the group. Once a bird has selected a tree, what triggers it to choose a particular nest site and what precisely to initiate suspension were unclear.

Nest I's suspension was the simplest, a mere loop of only a few strands. Some of the other nests had most intricate suspensions — Nest IIIa, for example. The reason for the difference may be that there were no twigs or branches near the initial point of attachment for Nest I. On the other hand, there were at least four branches close to the top of Nest IIIa, and the bird anchored here to each one. Similarly, alongside Nest I were four branches, one below the other, and again the bird made attachment to each as it worked its way down, or up, as the case may be.

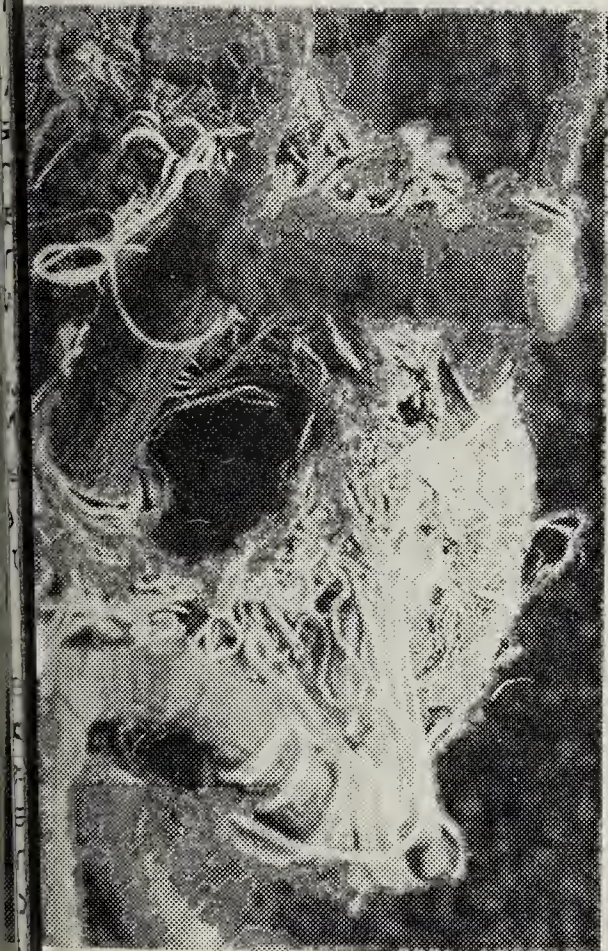
A considerable variety of material was used in the nests. Nest I, though a non-indigenous material — horse hair — may be the pure form of oriole material, having minimum volume, least material, and, as a result, least energy expenditure in construction. This nest was



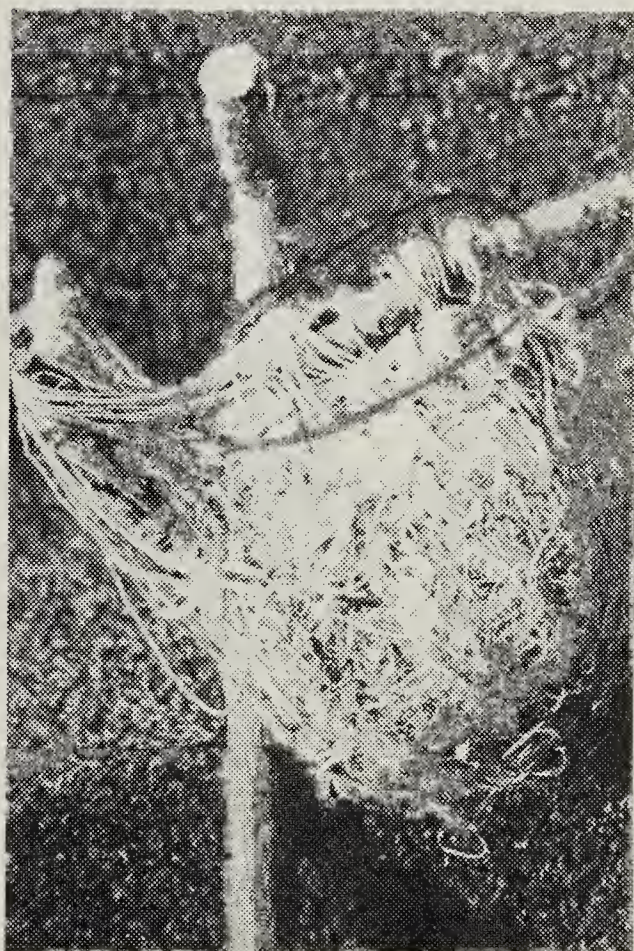
I : Oriole nest, 100% horsehair



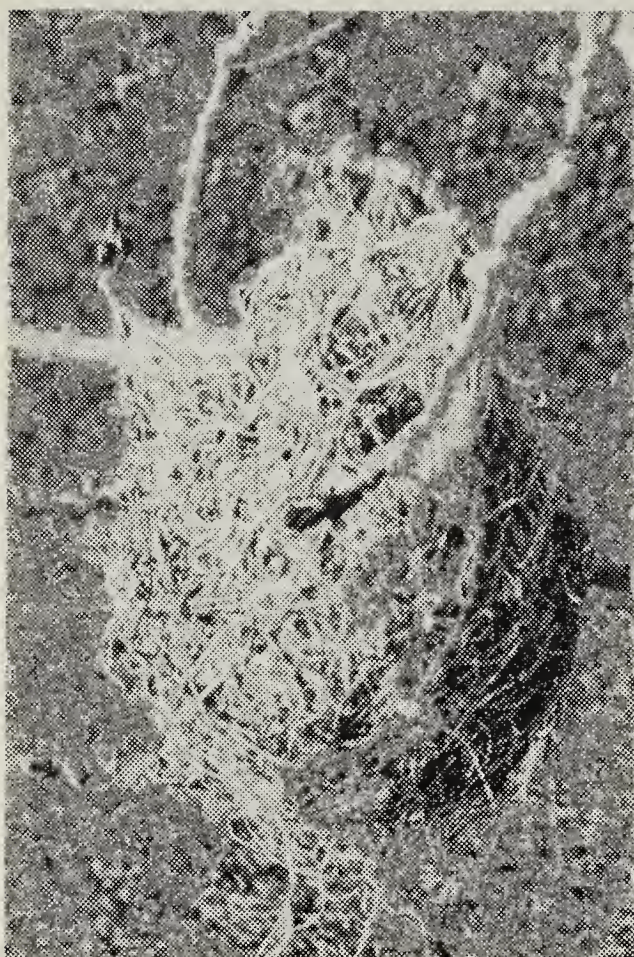
Nest II : Oriole nest, 50% horsehair, 50% string



IIIa : Oriole nest, 75% string, 25% bark



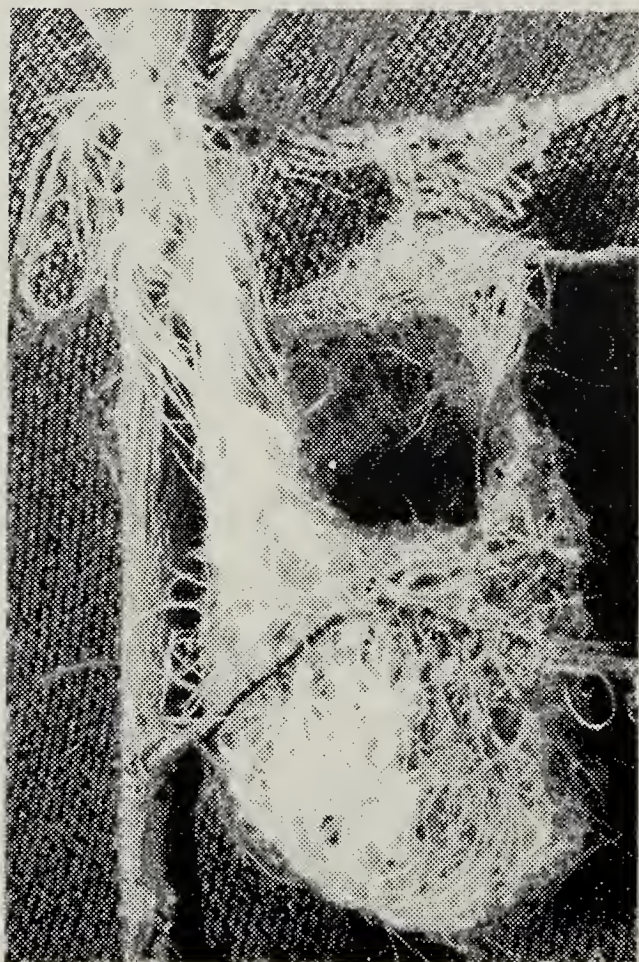
Nest IIIb: Oriole nest, 75% string, 25% bark fibre



Nest IV : Oriole nest, 100% bark fibre



Nest V : Oriole nest, 100% synthetic cord



Nest VI: Oriole nest, 100% synthetic twine

4 in. by 4 1/4 in. by 3 in. high to the top of the opening.

The oldest, smallest and simplest in the collection, Nest I was notable in three respects: ideal suspension, efficient form and optimum use of materials. Entirely of horsehair, it reflects a way of faring now gone.

The Opseths had hung out short lengths of string for nest material and the birds readily took them (Nests II and III). Accompanied by the male, the female would fly down, pick up a length, fly back to the nest and weave it in, still accompanied by the male, who, typical of the species, was in constant attendance but did no work.

Coarseness of string made no difference, but colour did. The birds took white, blue or purple, but not red — not once, but repeatedly and over several years. Their instinct may have been to avoid

strong colours or colours markedly contrasting with surroundings. To human eyes, however, that explanation does not fit with what we see in Nest VI. That nest, made of synthetic twine, was still an eye-catching shiny white when the nest was taken down.

Nests V and VI were of the Plastic type, one made of flat nylon cord from feed grain bags (robins used it too), the other of a teased synthetic twine.

The only truly natural nest in the selected group was Nest IV, which was made solely of bark fibres. The other five used one or more non-indigenous materials. For some reason, the lower part of this nest was 1/4 in. thick, much thicker than in the other nests. One can see through the bottoms of most of them. There was a decided thermal advantage in a thick layer of bark fibre. To begin with, it has a higher insulating value per strand than either plastic or horsehair.

The orioles were not constrained to use one material throughout. Nest II is 80% string and 20% horsehair. Nest III is 75% string, 25% bark fibres and some horsehair.

The weaving appeared most random, looking more like felting on some nests. However, on IIIb (the side view of Nest IIIa) interlacing of lateral and suspending strands may be seen immediately below the cross twig (this section is circled on the photograph).

The typical oval opening was 2 in. by 3 1/2 in. Compared to this, the 1 1/4 in. diameter hole in Nest IIIa was small. The year of that nest, 1979, saw a tent caterpillar infestation in the district. The trees were defoliated, exposing the nest, and though the birds stayed on, they acted shy (Northern Orioles are among the few species that will eat hairy larvae such as tent caterpillars²). One view is that the presence of the caterpillars caused the bird to make a smaller opening. Another opinion is that in this particular case the inherent urge to secure the nest to every nearby twig inevitably led to a small round opening.

A female oriole is 7 in. long from tail tip to bill tip, twice the length of her nest.¹ This means that while incubating she has to adopt a U-shape, head and tail pointed up and almost touching.

A collection of nests such as the Opseths' provides insights into variations in building techniques and into results of habitat changes, including impacts of human activities. We are grateful to Mrs. Helen Opseth and Otto Opseth for making the nests available and providing information about them. We greatly appreciated their kind assistance during our visit.

¹GODFREY, W. E. 1986. The birds of Canada. National Mus. of Canada, Ottawa. 595 pp.

²SALT, W. R. and J. R. SALT. 1976. The birds of Alberta. Hurtig, Edmonton. 498 pp.

KENTUCKY WARBLER SINGING IN REGINA

FRANK H. BRAZIER, 2657 Cameron Street, Regina, Saskatchewan. S4T 2W6

Regina had had about 12 mm of rain early on the morning of 14 July 1989 and when I set out to walk in Wascana Park the sky was heavily overcast though the rain had ceased. As I passed by Willow Island (at about the same place where Fern Lawrence had in spring 1988 found a male Prothonotary Warbler) I heard a strange bird song. I stopped and after a somewhat lengthy pause it was repeated. It consisted of five notes, all on the same pitch, unaccented and rather deliberately given. From its quality I was sure the singer was a wood warbler, but which one I knew not. At intervals the song was repeated three more times, which enabled me to focus on a large Manitoba Maple. But, because of the dense leaf growth, I could detect neither bird nor movement. I put words to the song in my head so that I would remember it better and when I got home about noon I had retained it clearly.

I played the warblers on the Peterson cassette and with the eighth bird on side four, band one, I had it exactly — Kentucky Warbler.³ I then switched to my Borror and Gunn warbler record, which in stereo gives a better rendition than the cassette — there was no doubt about it.¹ Finally, I consulted the sonagram in my Robbins guide, and for Kentucky Warbler I had a precise picture of the song I had heard earlier: six notes on the same

pitch, evenly spaced, somewhat slow for a warbler.⁴ The sonagram represented a bird singing six notes, whereas I could detect five only from my bird.

In the afternoon I went back hoping to see or hear it again but was unsuccessful. I had informed others of its presence but I received no reports.

The only other Kentucky Warbler occurrence in Saskatchewan (sex not given), the one which entitled the species to hypothetical status for the province, was in Moose Jaw on 25 September 1971, by John C. Horton and Robert D. Rafuse.²

¹BORROR, D. J. and W. H. GUNN. Songs of warblers of eastern North America. Vol. IV, Sounds of nature series. Field Notes of the Ontario Naturalists, Toronto. (record album)

²HOUSTON, C. S. 1972. Northern Great Plains region, the fall migration, 1971. *Amer. Birds* 26:80.

³PETERSON, R. T. (Editor). 1983. A field guide to bird songs of eastern and central North America. Cornell Univ. Ornithology. Second Ed. (two cassette tapes).

⁴ROBBINS, C. S., BERTEL BRUNN and H. S. ZIM. 1966. Birds of North America. Golden Press, New York.

IVORY GULL IN REGINA

FRANK H. BRAZIER, 2657 Cameron Street, Regina, Saskatchewan. S4T 2W5

The Ivory Gull is the quintessential arctic bird, mainly remaining in the circum-polar high latitudes all year. Tuck notes that its breeding grounds are arctic islands and coasts.⁵ Godfrey describes its Canadian summer habitat as arctic coasts and islands, permanent ice and open water, while it winters over arctic ice south to the arctic coasts, Labrador, pack ice off Newfoundland, and usually further south to the New England coast. It is rare elsewhere in Canada.¹ Peters and Burleigh inform us that the birds vary their marine food fare with krill, lemmings and other small rodents.⁴

Thus the Ivory Gull is a most improbable avian visitor to Regina but on 4 September 1989, a beautiful sunny day, while John Nelson and I were enjoying coffee on the deck of the Marina Cafe in Cascadia Park, we saw one. I was seated at a table in the shade of a poplar tree, facing north towards the cafe and John sat opposite. It was about 10:15 a.m. As I glanced upward a small white bird came sailing into view over the cafe, too high (about 10 m), and planed southwards, hardly moving its wings, until it passed from view behind the trees in my rear. I drew John's attention to the bird, which he saw from a different perspective. I was looking upward at an angle of about 45°.

What I saw was a small gull, about Franklin's Gull size, 35 to 40 cm long. Its upperparts were all white. It had no trace of a band on the end of its straight ended bill nor any black on the wings or head, and its bill was dark basally with yellow towards the tip. Just before it was lost to view I could see that its upper parts were white. I did not notice the colour of



Ivory Gull

the legs. John's view, being more restricted, confirmed the white underparts and the straight-ended tail. There is only one gull that matches that description — an adult Ivory Gull.

While an Ivory Gull in Regina is almost incredible there are some records that confirm its occurrence far inland. Gollop reports an Ivory Gull northeast of Calgary on 17 May 1987;² Lahrman cites Fred G. Bard's sighting of five Ivory Gulls on Nemeiben Lake (near La Ronge, Sask.) on 16 September 1976.³

¹GODFREY, W. E. 1986. The birds of Canada. National Mus. of Canada, Ottawa. 595 pp.

²GOLLOP, J. B. 1987. The spring migration, March 1-May 31, 1987. Prairie provinces region. *Amer. Birds* 41:448-450.

³LAHRMAN, F. W. 1977. Ivory Gulls at Nemeiben Lake. *Blue Jay* 35:49.

⁴PETERS, H. S. and T. D. BURLEIGH. 1951. The birds of Newfoundland. Dept. of Natural Resources, Prov. of Newfoundland, St. John's. 431 pp.

⁵TUCK, G. S. 1978. A field guide to the seabirds of Britain and the world. William Collins, London. 292 pp.

SUCCESSFUL BREEDING OF BLACK-NECKED STILTS IN SASKATCHEWAN

CRAIG D.C. SALISBURY, LORRIENE D. SALISBURY, 2205 Ewart Avenue, Saskatoon, Saskatchewan, S7J 1Y1, and JOHN R. PATTERSON, 554 Bornstr Terrace, Saskatoon, Saskatchewan. S7N 3Y1

The first successful breeding of Black-necked Stilts in Saskatchewan was observed near the village of Bradwell in summer 1989. Three young were fledged. The first confirmed breeding record in the province was in 1987 at Blackstrap Reservoir, just southwest of the 1989 site, but the eggs were lost, probably to avian predation.⁵ A breeding record from Qu'Appelle in 1894, based on collected eggs, is now considered suspect.² The 1989 nesting was on an alkaline slough southeast of Bradwell and just west of Bradwell Reservoir. The slough is divided by a north-south grid road used frequently by people travelling to the reservoir to fish. The nest was located on a grass- and reed-covered island in the center of the western part of the slough.

A single stilt was originally spotted by Craig and Lorriene Salisbury at 7:00 p.m. on 5 June 1989, feeding on the shore east of the road. The unique shape and coloration of the bird left no doubt as to its identity, which was confirmed by the Peterson field guide.³ Members of the Saskatoon Natural History Society were notified and the sighting was again confirmed. On 6 June John Patterson spotted a single stilt sitting on the island. Because of the cool and windy weather, it was not clear if the bird was on a nest or simply seeking shelter. However, it flew up several times to chase two gulls flying overhead

and then returned to the same resting site each time. On 8 June Craig Salisbury also spotted the bird sitting on the island. It left the resting position to feed on the shore of the island and several times scolded American Avocets feeding nearby. After approximately 5 minutes the stilt returned to the same location on the island and used its bill to arrange materials under its body before carefully lowering itself. Several minutes later a second stilt flew in and began feeding near the resting bird. From these observations it was concluded that the birds were incubating. The stilts were sharing the island with several pairs of nesting avocets.

During the next 3 weeks the pair was observed frequently by the authors, the usual pattern being one bird feeding and the other on the nest.

On 1 July both adults were spotted feeding east of the road. Two Frank's Gulls were seen hovering several meters above the nest site, but they did not land and soon flew away. On 3 July, one downy young were spotted in the reeds along the shore of the eastern part of the slough, with one parent feeding nearby. On 16 July, at 9:30 a.m., three chicks, now approaching two-thirds adult size, were observed and photographed feeding with the adults in the same area. On 28 July an adult bird was feeding in a freshwater slough 1 km north of the



Black-necked Stilts, one on nest and one in water

Craig Salisbury



Black-necked Stilts, downy young in water

Craig Salisbury

breeding site. The other parent and three chicks were feeding on the rapidly drying breeding slough. By 5 August all had moved to the freshwater slough, although only two chicks could be located. Two adults and two young, now nearly fully grown and displaying a drab version of the adult plumage, were last seen on the freshwater slough on 18 August. None was observed in the area afterwards and it was assumed that they had migrated.

Discussion

The normal breeding range of Black-necked Stilts includes the west and midwest United States and its gulf and southeastern coasts.^{2 4} In western Canada only isolated observations have been reported.^{1 2} Godfrey suggested that drought conditions in the normal breeding range accounted for breeding records in Montana and Alberta in 1977.² The drought conditions suffered in the midwest United States over the past 3 years are presumably a factor in this Saskatchewan breeding record.

Wedgwood and Taylor were troubled by the predation of the nest reported in 1987, citing the passive nature of the breeding pair and human activity as possible causes.⁵ The birds described in this report reacted more aggressively to intruders such as gulls and neighbouring avocets and also to human activity. Although exposed continually to significant motor vehicle traffic, the stilts re-

sponded to stopped vehicles with frequent alarm calls and, in one instance, when one of the authors left a vehicle, one adult approached with head lowered and wings spread while calling loudly. This defensive behaviour intensified when the chicks appeared. Because of this, the authors made no attempt to visit the nest and limited the duration of visits to the breeding area. The location of the nest in the centre of a slough surrounded with barbed wire probably discouraged visits to the nest by other observers. The 1987 nest at Blackstrap was located 21 m from a grid road and was more accessible. Colonial nesters, the stilts, so likely benefitted from the presence of nesting pairs of avocets on the island in keeping natural predators away.

¹CHAPMAN, B., J. P. GOOSEN and I. OHANJANIAN. 1985. Occurrences of Black-necked Stilts, *Himantopus mexicanus*, in western Canada. *Can. Field-Nat.* 99: 254-257.

²GODFREY, W. E. 1986. The birds of Canada. National Mus. of Canada, Ottawa 95 pp.

³PETERSON, R. T. 1980. A field guide to the birds. Houghton Mifflin Co., Boston. 384 pp.

⁴SCOTT, S. L. 1983. A field guide to the birds of North America. National Geo. Soc., Washington. 464 pp.

⁵WEDGWOOD, J. A. and P. S. TAYLOR. 1988. Black-necked Stilts in Saskatchewan. *Blue Jay* 46:80-83.

LAUGHING GULL IN REGINA

FRANK H. BRAZIER, 2657 Cameron Street, Regina, Saskatchewan. S4T 2W5

On 19 May 1989 at about 11:00 a.m., I was walking along the eastern side of Wascana Lake just south of Willow Island. I looked westward when a flock of about 20 Franklin's Gulls flew down the channel east of the island towards me. They were wheeling and diving all over the water, evidently feeding on flying insects. I got my binoculars on them as they came by and noticed a laggard flying behind them, also feeding on the wing. The flock swung westward across the lake, but the loner behind them flew low at about eye level (the bank where I stood is quite a bit higher than the water surface) and about 15 m away. I had an excellent view of the black head and the gray mantle with dark wing ends. There was no trace of white in them. To clinch matters, as the bird came by, the upstroke of its wings clearly revealed that the primaries were all dark, not just the tips as in the Franklin's Gull.¹ As it hovered in the air pursuing insects, I saw the underwing pattern often. There is no doubt that it was a Laughing Gull and, I believe, a first record for Regina. *Editor's note: second for Saskatchewan: one, July 1975, Chaplin Lake, by (B.O. Savile).*

It flew westward after the Franklin's and that was the last I saw of it. I searched eastward along Wascana Lake as far as the eastern edge (about 1.75 km away) but could not find the flock again.

However, on the morning of 26 May, on the southern side of Wascana Lake, I saw another but smaller flock of Franklin's Gulls, performing much as the earlier one had done. Again, I thought they were feeding on flying insects. They were fairly low, but a little higher up I noticed a loner, a gull which, when seen through binoculars, had dark wing ends without any trace of white. When it dived low and wheeled I could see the gray mantle and dark primaries with no white. As it was so close to the other gulls this time I could see it was about the same size. Actually, the species is 5 cm longer than the Franklin's Gull. This bird was also a Laughing Gull, but whether it was the same one I had seen on 19 May I could not tell.

¹SCOTT, S. L. 1987. Field guide to the birds of North America. National Geog. Soc., Washington. 464 pp.

JUNIOR NATURALISTS

"Ha, ha, ha ha ha! You can't catch me," laughed Mark Magpie.

The big farm dog leapt high into the air. Mark dodged sideways just in time.

"Thief! Thief! Thief!" barked the dog at the top of his lungs.

Mark circled a little higher. "Hey, take it easy. Just think how bored you'd be on these cold winter mornings without me. Come on. Catch me if you can." Mark Magpie dove straight down at the dog's food bowl. He grabbed a scrap of meat and took off.

The dog lunged at Mark and missed. Mark headed for the trees, but he stayed low enough and slow enough to give the dog some fun. After a wild run, the dog headed back to the yard with its tail wagging.

Phillipa Fox was waiting for Mark on the far side of the bluff.

"Hey, there's my foxy lady friend, foxy lady in her lovely winter coat sitting sweetly in the snow," babbled Mark.

"Don't you think you're going to sweat talk me, Mark Magpie," said Phillipa. "You think you're so brave! One of these days you're going to get into trouble with that game."

"Who, me?" asked Mark, innocently cleaning his shining blue-black tail.

"Yes, you," Phillipa said. "You know people don't like wild things in their yards."

"They do, do, do," said a bright voice over their heads. "At least they love me, me, me. I'm Dee Chickadee, dee, dee."



"Oh! Hi," said Phillipa, looking up. "It's nice to see a bird besides Mark Magpie who isn't afraid of a little cold."

"Nope, nobody can call me chicken," interrupted Mark. "I don't fly south with the other chickens."

All of a sudden the whole bush was full of tiny giggles. "Tsee, tsee, tsee," even chickadees were laughing at Mark. Even chickadees know chickens don't fly south.

"So, why do you all think people like you?" asked Phillipa Fox, trying to get back on the subject.

"Come and see, see, see," they called. The whole flock took off over the bluff to the house.

Phillipa went and sat just inside the bushes. She could see the house, but nobody could see her. Mark flew right to the yard to watch.

A girl came out of the back door. She took some little black things out of a bag and held them out on her mitten. Then she stood absolutely still.

What happened next made Mark Magpie almost fall right out of his tree. The Chickadee had landed on the girl's mitten.

Mark remembered his wings and hopped over to Phillipa. "That's no chickadee, chickadee. Did you see Dee do that? Did you see what Dee did?"

Little giggles told the two friends the chickadees were back.

"I dee, dee, did that because she had see, see, seeds for us," said Dee. "See, see, I told you they like us. She filled up the bird feeder for us."

"We, we like them too," said the other tiny voices. "You see, see, on cold days we need to eat to stay warm. We can starve in a day with no food. So we'll visit anyone who puts out good sunflower see, see, seeds for us."

"I thought you saved seeds from summer and ate butterfly eggs and things," said Phillipa.

"Oh, we do, do, do," said all the little voices. One chickadee hung upside down and pecked some eggs off the bottom of a twig to prove it.

"But we like sunflower see, see, seeds," explained Dee. "They really help on cold, cold days."

Phillipa laughed. The chickadee looked so cute hanging upside down. "Those eggs won't turn into tent caterpillars next spring. Keep it up. Hey, Mark Magpie, I think these little guys are smarter and braver than you."

"Cheeky chicken chickadee," screeched Mark, and turned his back on them.

— *Karen Rispin*, Box 507, Dalmeny, Saskatchewan. S0K 1E0

NATURE LIBRARY

ARCTIC DREAMS: IMAGINATION AND DESIRE IN A NORTHERN LANDSCAPE

BARRY LOPEZ. 1986. Bantam Books, Inc., New York, N.Y. 417 pp., maps, appendices, bibliography, index. Paper \$5.95

Arctic Dreams is a many-faceted and sometimes passionate exploration of the North — "a conversation with the land," the author calls it — by an acclaimed American nature writer who here applies to brilliant effect his expertise in the fields of arctic biology, ecology, archaeology, ethnography and history.

Why are people drawn to the arctic? What do they see when they get there? These questions are Lopez's starting points. A good portion of the book is a meditation on perception. Preconception (what the north looks like in one's imagination) and desire (what one wishes to find there or to accomplish there) colour our perception. The fortune-seeker, the Inuit, the explorer/mapmaker, the biologist, the oilman, the big-city lawyer working on a land claim, the adventurer, the vacationer, the government official, the Irish monk of old in search of a place suitable for contemplation — each perceives the common elements of the landscape in a different way. Indeed, the Inuk situates himself in space differently from the way people of European extraction do.

There is no absolute reality, Lopez warns. No one can tell the whole story. "Any culture that would judge the perceptions of another is advised to proceed cautiously."

The natural elements of the landscape overlap the mythical ones at certain points, giving the book a powerful resonance. The narwhal's tusk, for example, was traded as the unicorn's horn was in the Middle Ages for twenty times its weight in gold. The Inuit, on the other hand, attach no great spiritual importance to the narwhal; to them it is a migratory food animal whose spirit is easily propitiated. Greenlanders valued the animal's skin above all other leather for its suppleness when used to make dog harnesses. In time, however, the tusk lost its value as a trade item; dogs in the north are being replaced by snowmobiles and the narwhal's fate is now linked to hunting pressure and to poaching for oil and gas wells in Lancaster Sound, an important summer feeding area.

Arctic Dreams is divided into eight chapters and an epilogue. Each chapter discusses some salient aspect of the north: the polar bear, the muskox, the narwhal, migrations, ice and light, perceptions of the north, arctic exploration. And each chapter offers scores of insights born of the author's research, his detailed first-hand observations and his profound metaphysical (and, increasingly, political) inquiry.

His prose is strong and graceful.

sometimes he charges it with poetry: "In [ice] pack, even a 250-ton ship could conceivably be crushed in two or three minutes, forced up in the air with an explosion of its oak ribs and driven under a grunt, like a grand piano caught in an industrial press." He likens caribou moving through the Ogilvie Mountains to food smoke in a snowstorm."

Lopez's descriptive passages sparkle as account of the movements of a flock of Lesser Snow Geese is, I'll bet, as vivid and accurate as any such account you'll ever read), and his sensitivity to light and shades of colour in ocean, sky and ice is extraordinary. When he describes transcendent moments from his own experience, as a result of some encounter with the land or its animals, he usually does so in terms that convey their luminous qualities with great immediacy.

But *Arctic Dreams* is also, as it must be, a call for restraint on the part of mankind. "And we need a tolerance for the unmanipulated and unpossessed landscape...we need to understand the relationship between tolerance and different sorts of wealth, how a tolerance for the unconverted things of the earth is intertwined with the substance of a truly good life."

When we learn where to defer, the author states, we achieve the wisdom to which we have aspired for centuries.

Lopez expends on this theme gradually through the course of the book, and at the end he speaks of the "dignified relationship" that is possible between a person and the land. "A more radical enlightenment is necessary, in which humanity is understood as an innate quality."

Where might the impetus for this new enlightenment be found? In the land. The things in the land fit together perfectly even though they are always

changing. I wish the order of my life to be arranged in the same way I find the light, the slight movement of the wind, the voice of a bird, the heading of a seed pod I see before me. This impeccable and indisputable integrity I want in myself."

The Arctic animals cunningly adapted to their environment, the harrowing experiences of the early explorers in a harsh, cold, testing landscape, the light and dark, the space and silence, "the great shift and expanse of life in the North," Lopez gathers up into a prodigious entity, between two paper covers.

Arctic Dreams is illuminating. It is a *tour de force*. — Reviewed by Bob Kohlmeier, 708 9th Avenue North, Saskatoon, Saskatchewan. S7K 2Y9

TO WHOM THE WILDERNESS SPEAKS

LOUISE DE KIRILINE LAWRENCE. 1989. Natural Heritage/Natural History Inc. Toronto, Ontario. 180 pp. Illustrated by Aleta Karstad. Paper \$14.95. Originally published in 1980 by McGraw-Hill Ryerson Ltd.

This 1989 reprint of *To Whom the Wilderness Speaks* is the most recent volume in "The Legacy of Louise de Kiriline Lawrence," a high-quality softcover series undertaken by Natural Heritage. It is the seventh book by an author whose works have for more than four decades enchanted readers of all ages.

A collection of 24 short, popular pieces which originally appeared in the international magazine *Audubon*, its contents quickly reveal Lawrence's dual strengths — the sensitive ear and powerful expression of a poet and the tenacity and accuracy of observation of a scientist. First introducing the northern Ontario forest world and her place in it, she proceeds to describe the lives of its inhabitants through both solid fact and skillful verbal imagery. Phoebe, nuthatch, chickadee, squirrel and others come alive on her pages. Her story of finding Whip-poor-will and Common Nighthawk nests and watching them throughout the season evokes much of the mystery surrounding these birds of the night. In "The Apartments," nest holes in an old aspen provide safe home to six species. Lawrence's subtle humour shines through her lengthy and clever description of the comings and goings of Pileated Woodpecker, Northern Flicker, Yellow-bellied Sapsucker, European Starling, Hooded Merganser and American Kestrel. "Enchanted Singer of the Tree-tops" recounts her study of the male Red-eyed Vireo who would appear to still hold the world record for songs in one day — 22,197 songs in 10 hours. We learn much about the male Rose-breasted Grosbeak, a "master singer" who also helps incubate, and who sings, sotto voce, even on the nest. We find amusement, and amazement, in her tale of chickadees who come to take seeds from her hand but refuse to accept even her presence when she is wearing her muskrat coat.

Some of Lawrence's creatures die as well, for such selections as "The Blooded Tooth and Nail" illustrate a darker, though no less essential, side of nature. To keep herself from seeing cruelty in predation by a Merlin she sets about to study and understand its needs, and winds up caring for two young herself after the parents disappear. Her conclusion? "Life exists and is nourished by life

itself. In this there may be drama, but not tragedy."

Whatever her subject, it soon assumes its place as part of the "larger pattern" ever present in her writings. Lawrence constantly reminds readers of what she sometimes calls the "problem of conservation." How to reconcile conflicting interests of humanity and technology and environment and wildlife occupies much of her thinking. In analyzing something as basic as a backyard feeding station, she quickly reaches the essence of this conflict, where even to act or not act...has become most difficult to decide."

Though Lawrence might occasionally be admonished for letting her enthusiasm nudge her into anthropomorphism, the reader is nonetheless more than willing to forgive — and to continue enlightening in the clear, simple and elegant prose of a woman for whom English was not the first, but the fifth language. Asa Karstad's charming drawings add much to that enjoyment.

Daughter of a Swedish naturalist, Louise very early sensed her own place in nature's scheme. Her kinship with the land sustained her through family and personal tragedies during the difficult early years of the century. Twenty years later, in Canada, she was finally able to reassemble the scattered threads of her youth and rediscover her path. On a hill above Pimisi Bay she built the famous "loghouse nest" where she began her studies and the writing which has since enriched the lives of so many. Although an untrained amateur in the beginning, she soon gained reputation as a serious naturalist and respected ornithologist.

Inspired by the natural world, she has generously passed that inspiration and awareness on to countless others and in so doing has entertained them as well as

sharpened their vision. Those who read
 quiet, careful and detailed studies
 emerge from that experience with a fresh
 light in nature and a heightened under-
 standing of the intricate web linking all
 . Those who read of the need to end
 destruction of the natural environment
 and, in working together, to recover the
 balance we have ourselves destroyed
 appreciate anew the urgency of those
 simple imperatives. In 1989 the mes-
 sage has never been more timely.

Lawrence was over 50 when she
 produced her first "nature" book. She
 polished the present work at age 86
 and 5 years later her last essays. Now
 she has finally slowed her pace. She
 has had to leave her beloved forest and
 no longer talks of writing other books

(Lawrence, *pers. comm.*). But, thanks to
 Natural Heritage's well-conceived series
 which brings back words long out of
 print, she will continue to speak not only
 to those who have long known her but
 also to all who have yet to make that
 important discovery.

Across two continents, through nine
 decades, Louise de Kiriline Lawrence
 has revered nature, sought to live ac-
 cording to its "code" and to share her
 vision. She seeks to share it still and,
 through works which are as powerful
 now as they have ever been, invites us to
 join in her search — while we still have
 time. — Reviewed by *Mary D. Gilliland*,
 902 University Drive, Saskatoon, Sas-
 katchewan. S7N 0K1



Northern Harrier young in nest

Juhachi Asai

EASTERN SCREECH-OWL IN SASKATCHEWAN AND ADJACENT AREAS

CHRISTOPHER I.G. ADAM, 28 Richards Court, Fredericton, New Brunswick. E3B 5K6

The Eastern Screech-Owl is common throughout most of eastern North America from southern Manitoba south to Texas. The American Ornithologists' Union lists the range of both species of screech-owl in the relevant western states and provinces as: Eastern Screech-Owl "resident from southern Saskatchewan (probably), southern Manitoba...west to eastern Montana, the Dakotas...recorded in summer (and probably breeding) in central Alberta," and Western Screech-Owl "resident from...western Montana" south to southern Baja California.²

In Saskatchewan, the Eastern Screech-Owl is a rare resident of riparian habitat in the southeastern portion of the province, chiefly along the Souris River, Wascana Creek near Regina, Moose Jaw, and north to Yorkton and Duck Mountain Provincial Park. Only two studies have been published concerning the status of screech-owls in western Canada.^{1 27}

Censusing screech-owls by playing taped calls has been done in various areas of the United States.^{6 17 20 25 37 38}

Both sexes sing and can respond to taped calls alone or in duet with a mate.³⁶ ³⁸ Whinny and warble (monotone trill) songs are given throughout the year, although their frequency varies seasonally. Song actually drops off in the nesting period.³⁸ The whinny song, used for territorial establishment and defense, increases from an April low to a high in

the winter months, while the warble song, used during the mating season, has its highest frequency in April and lowest in December.³⁸ Both songs may be heard equally in late summer, together with the varied screams and screeches of fledged young.

The impetus for this study was a census of Eastern Screech-Owls that was coordinated in 1985 for the Saskatchewan Natural History Society (SNHS). This paper reports on surveys conducted along the Souris River in 1985-1987 and in 1987 along the Souris in North Dakota and the Milk River in Montana. It summarizes the status of the Eastern Screech-Owl in Saskatchewan and compares the Saskatchewan range with that in Manitoba, Montana and North Dakota. All known Saskatchewan records of screech-owls are given in Table 2 (follows text). Records from areas adjacent to Saskatchewan are also listed (Tables 3, 4, 5 following text) and an overview is given of each. Preliminary conclusions were contained in an earlier paper.¹

Methods

1985 AND 1986 CENSUSES. The March and April 1985 census used volunteers gathered mostly from the SNHS. The 1986 census was conducted in March and April using some of the same volunteers. Volunteers were assigned to different areas of the province and were supplied with topographic maps, instru-

ns and a tape of owl calls. No screech-
 ows were recorded in any of the areas
 censused by volunteers (Table 1) except
 Weyburn and between Regina and
 Moose Jaw. Heavy snow cover made
 access difficult in the Cypress Hills and
 areas north of the Qu'Appelle Valley.
 Caution must be exercised in interpret-
 ing the apparent lack of positive results.
 Some areas were censused only once
 by observers inexperienced in the use of
 the playbacks and some surveys were
 conducted in unfavourable weather.

Table 1. AREAS CENSUSED 1985-86
 WITH NO SCREECH-OWLS RE-
 CORDED (Volunteers in parentheses).

Southeast: Pipestone Ck. south of
 Rossmore (W. Haussecker); Moose
 Mountain Prov. Park (R. Kreba); Moose
 Mountain Ck. north of Oxbow (R. Finley);
 Winkeshell Ck. near Trossachs (Adam).

East-Central (Qu'Appelle Valley): Fort
 Qu'Appelle to Round L. (C. Escott, H.
 Lepp); Sintaluta to Wolseley (R. & S.
 Lepp).

Southeast: Whitesand R. south of Can-
 ton (W. & J. Anaka); Yorkton area, Assin-
 iboine R. (W. Hjertaas, L. Lepp).

Central: Lumsden-Flying Ck. (A. Bin-
 ch; Dunnett Park near Avonlea (Avon-
 lea Ck.; T. Riffel); Avonlea Ck. (Adam);
 Regina to Moose Jaw (R. Luterbach);
 Qu'Appelle R. from Wolseley east and
 west near Moose Jaw (Adam).

East-Central (S. Saskatchewan R.):
 Qu'Appelle to Lumsden (W. Harris); south of
 Yorkton (C. Escott); north of Gardiner
 (S. Shadick).

Southwest: Cypress Hills-West & East
 (W. Harris); West & Centre blks (S.
 Shadick); Frenchman R. Valley, East-
 & West Ravenscrag (Adam, R. Jerema).

The Souris River Valley between
 Estevan and the U.S. border was cen-
 sused by Adam and Sheollagh Fitzger-
 ald 9-12 April 1985 and 21-24 April
 1986, from dusk until about midnight. At
 each stop, a complete sequence of three

whinny and two warble songs was played
 until either a response was elicited or a
 total of five sequences failed to elicit
 one.⁷ Stops were usually 5 to 10 min-
 utes. Although the most suitable habitat
 was surveyed, some was inaccessible
 due to absence of roads or trails, making
 impossible the ideal survey — a stop
 every 0.5 km.

Other studies have shown wind to be
 the single most important weather vari-
 able affecting owl responses to tape
 playback.^{36 37 38} We tried to avoid peri-
 ods of high winds but found that owls
 responded even when winds were of
 moderate force.

In 1986, elimination of unproductive
 habitat reduced the number of stops.
 Singing owls were located and observed
 by flashlight on 23 and 24 April. This
 method was more time-consuming and
 prevented forested habitat from being
 censused from the road. Attempts to
 resurvey the areas using the same vol-
 unteers, brought a much lower response.
 A media campaign produced some inter-
 esting records from the public.

THE SOURIS RIVER STUDY AREA.
 The Souris River meanders southeast
 from its source near Weyburn through
 the Study Area (Fig. 1), about 95 km of
 broad valley in the Mixedgrass Prairie
 Ecodistrict between Estevan and the
 North Dakota border.¹¹ Southeast of
 Minot and the junction of the Des Lacs
 River, the Souris swings east, then north,
 skirting the west side of the Turtle Moun-
 tains before entering Manitoba, where it
 joins the Assiniboine near Brandon.

Typical habitat along the Souris, and
 in all other areas where screech-owls
 have been heard, is discontinuous river
 bottom woodland (Manitoba Maple, *Acer
 negundo*; American Elm, *Ulmus ameri-
 cana* and Green Ash, *Fraxinus pennsyl-
 vanica*), within a meander or curve, and
 located so that the meander creates a

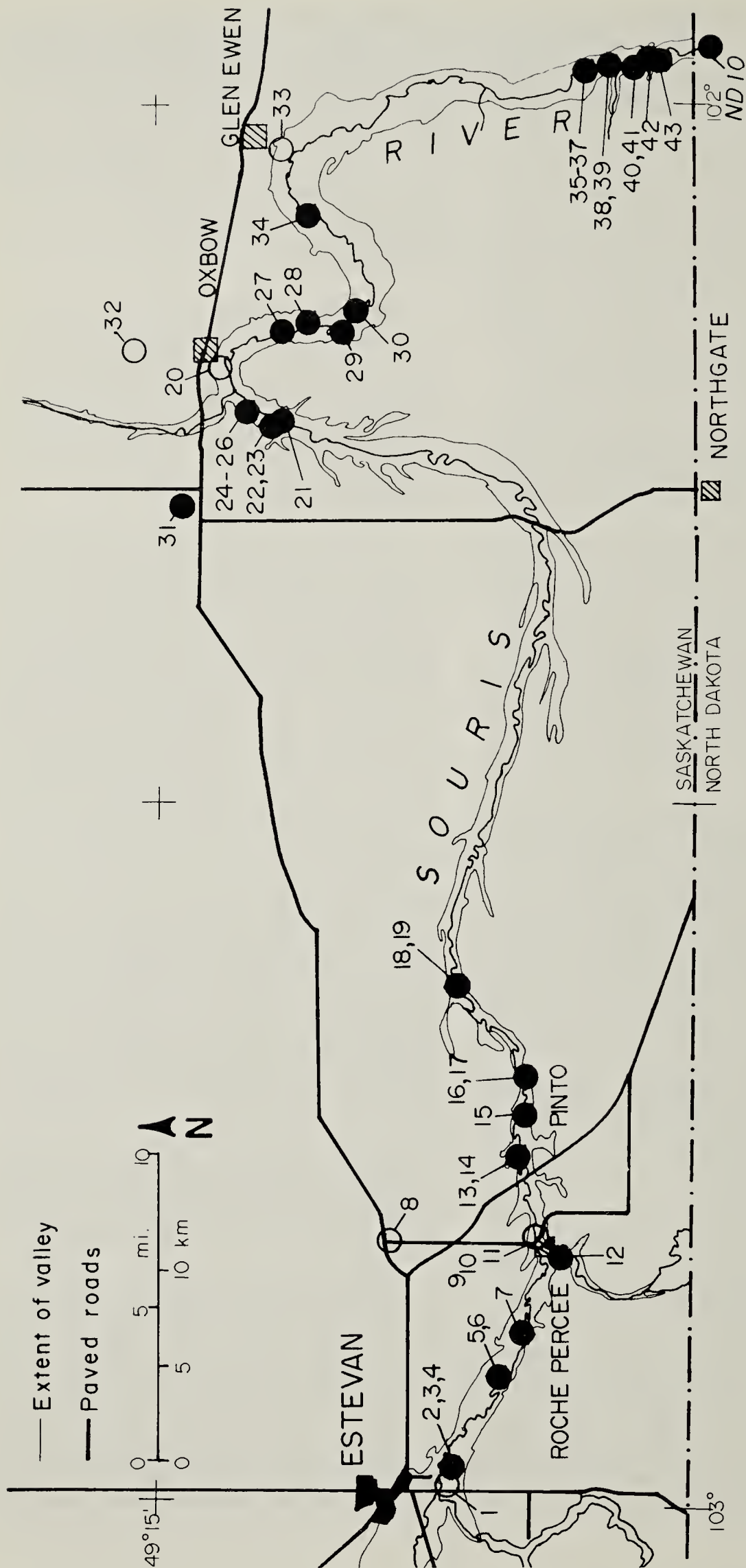


Figure 1. Eastern Screech-Owl records from the Souris River Study Area, plus one from North Dakota ● = confirmed; ○ = hypothetical, unconfirmed or location approximate

crete patch of woods. The maples are mature and large, with twisted branches and numerous natural cavities.

Results

SOURIS RIVER STUDY AREA, SASKATCHEWAN. Between 21 and 24 April 1986, screech-owls were recorded at 17 of 53 stops between Estevan and the U.S. border, compared with 8 of 85 in 1985. The apparent increase is no doubt due to more efficient census techniques rather than an increase in birds. All observed owls appeared to be the pale *maxwelliae* species.

Owls responding to the taped calls usually approached to within 7 or 8 m and perched on an exposed branch within 3 to 5 m of the ground. A second team member zeroed in on the call and located the owl by flashlight. The calls were not loud and gave the impression that the owl was singing from several hundred m away. Of eight owls thus censused, seven were actually observed and the colour phase determined. One was a probable gray-, five were definitely gray- and two were red-phase. The owls were both located south of Glen Ewen. In neither year were the owls singing of their own volition, since April was within the low calling period. Best responses to taped calls were from early evening to about 2 hours after sunset.

A number of screech-owl "hotspots" in the Souris valley seem to be interspersed with areas of unsuitable habitat (Fig. 1). "Hotspots" are (1) the Estevan area, including Roche Percee, (2) the Oxbow area and (3) the area south of Glen Ewen at the U.S. border. The majority of owls were associated with areas with haystacks and/or feedlots or near villages or houses. A long, mostly uninhabited stretch of the Souris River in the Glen Ewen area produced only one response. However, the river immediately north of the U.S. border had the densest population of screech-owls

in the entire Study Area — about one territorial owl per km, compared to one owl per 3 or 4 km elsewhere.

It is dangerous, however, to draw conclusions from these observations, for three reasons: (1) the census usually concluded around midnight; (2) since this is a dispersed population, the observers may have censused portions of the Study Area which lacked owls at about the time the responses seemed to taper off; and (3) the sample size was very low on any given night.

Discussion

NORTHERN GREAT PLAINS. Portrayals of Eastern Screech-Owl range differ.^{16 21 33} A more appropriate range is portrayed in Fig. 2 (stippled area) and includes southeast Saskatchewan west to Regina and north to Duck Mountain; southern Manitoba; the Milk and Frenchman rivers of Montana and Saskatchewan; the Yellowstone River of Montana; the Missouri River in North Dakota and the eastern part of that state.

SASKATCHEWAN. Godfrey included the Regina area and the southeast in the range of the Eastern Screech-Owl but has now dropped that portion, representing it by a "?"; he has retained a "?" in southwestern Saskatchewan.^{9 10} The former range delineation is more appropriate to the present situation. Fig. 2 and Table 2 summarize all the known provincial records.

Southeast. The core of Eastern Screech-Owl range in Saskatchewan is the Souris River east of Estevan, with concentrations from Estevan to Pinto (records 1-19 in Table 2 and Fig. 1), Oxbow to Glen Ewen (20-32) and at the Saskatchewan-North Dakota border region (35-43); this latter area extends into North Dakota (Fig. 2). Modern occurrences correspond to older references, indicating a viable population along the Souris since at least the 1920s. The majority of records are of

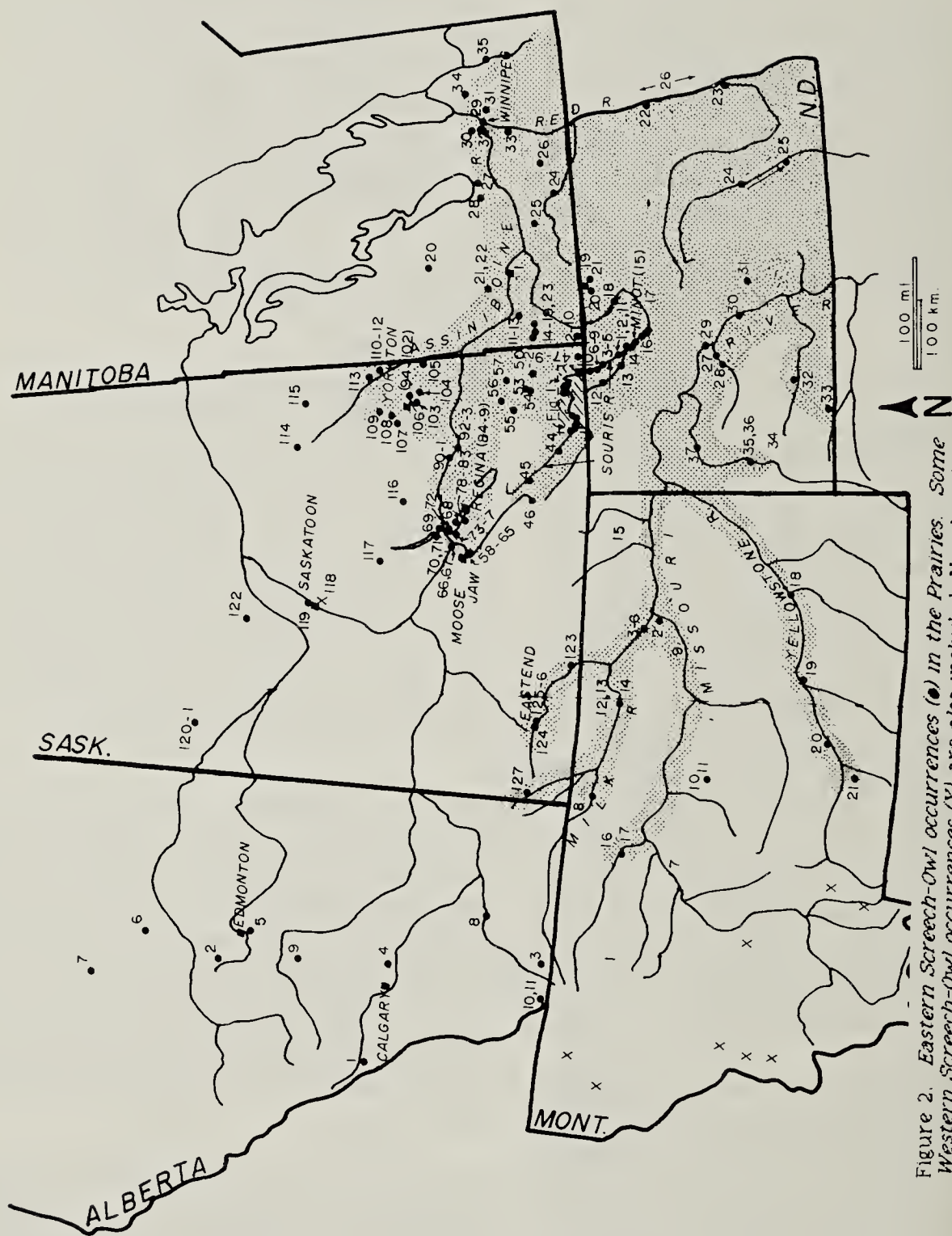


Figure 2. Eastern Screech-Owl occurrences (●) in the Prairies. Some Western Screech-Owl occurrences (X) are also included. Numbered locations refer to records described in Tables 2-5 and in the text. Alberta records are not discussed in this paper. The Souris River

territorial birds censused by tape playbacks. Records away from the river probably correspond to fall and winter dispersal of young birds or are of adults seeking food. Recent records in the headwaters of the Souris indicate occasional screech-owl occurrences.

Central. Pockets of maple woods on Wascana Creek near Regina and Wascana (Fig. 2: 72-83) have had from one to three pairs of screech-owls in the recent past. Such fluctuations are probably typical of a peripheral population. There are also several pre-1961 fall and winter records for the city of Regina (84-85) and both pre-1940 and recent records to the northwest (66-71). Moose Mountain (58-65) has harboured a territorial pair for several years in a pocket of riparian maple habitat along the Moose Mountain River. A nest found in 1987 may have belonged to this species, but remains unconfirmed.

The Qu'Appelle River Valley (90-93) is an ideal for screech-owls in some localities, but only Katepwa has concentrated records of territorial owls.

West. Screech-owls are generally absent from the almost treeless prairie north and east of the Souris River, although there are older records of nonterritorial pairs (47-57). Scattered records exist between the Qu'Appelle and Souris rivers, including two pre-1970 records of singing birds from the southern edge of Riding Mountain Provincial Park (53, 54). Suitable riparian habitat in this region is rare and few surveys have been conducted.

East. The Yorkton area has records of several screech-owls (94-109), supporting a small semipermanent population. There are recent records of singing birds from Duck Mountain Provincial Park (110-113) and a 1979 record of a

singing bird from the Porcupine Hills (115).

North. Two extralimital records (1970s) from Saskatoon indicate the accidental presence of both western (hypothetical) and eastern species (118, 119). In 1987 an amazing four extralimital records were of songs heard at Manitou Beach (117) and Turtle Lake (120, 121) and of a dead owl at Shellbrook near Prince Albert (122). The Turtle Lake record, the most northerly in Saskatchewan, is from the Mixedwood Ecodistrict.¹¹

Southwest. Recent records from the Frenchman River (123) and Eastend (124-126) may represent screech-owls which have moved up the Frenchman from the Milk River in Montana. An apparently dark-billed bird observed in poor light in the Cypress Hills (127), although not identified to species, was either an Eastern which may have moved up the Battle River from the Havre area (also the Milk River) or a Western from the mountains of Montana. The status of Eastern Screech-Owl in southwest Saskatchewan is rare and local.

MANITOBA. Southern Manitoba is within the continuous range of Eastern Screech-Owl, although portrayal of the range differs slightly.^{10 21 33} In Manitoba, the species is not restricted to riparian woodland as it is in Saskatchewan. Table 3 lists sources of records near the Saskatchewan border.

Southwest. A few scattered records exist for southwestern Manitoba (Table 3, 1-23), from Riding Mountain National Park to Lyleton. Several observations from 1972 through the 1980s are from the Lyleton area (2-10) near the Antler River, including records of singing birds and flightless young. Lyleton is only about 80 km northwest of the Bottineau-Dunseith area of the North Dakota Turtle Mountains, where there have been

screech-owl records for years, and is also about 60 km due east of a concentration of screech-owls in the southern reaches of the Souris River in Saskatchewan.

Other records are from Sinclair (23), Pipestone (14) and the Reston area (15-19), where a family of screech-owls has hatched annually in the 1980s in or near a Reston park. Recent winter records are from Brandon (1), Oak Lake (11-13) and Rivers (21, 22). Riding Mountain National Park's checklist refers to the screech-owl as a very rare summer resident, likely based on an earlier observation by Soper (20)³⁹; this is probably Manitoba's most northerly record.

Central. A few scattered observations come from south-central Manitoba and Lake Manitoba. The former include two 1927 specimens from La Riviere (Fig. 2: 24) on the Pembina River; a recent specimen from Cypress River (25); and a specimen and documented nests from Roland (26). A 1975 Christmas Bird Count (CBC) record from Delta Marsh (27; *Am. Birds* 30:204) and a specimen from Westbourne (28) are the only records from the south end of Lake Manitoba (All: H. Copland, *pers. comm.*).

Winnipeg Area. Screech-owls are well-established residents of the area (Fig. 2: 29), the large number of records due in part to the many observers. Specimens exist from Argyle (30), Dugald (31), Headingley (32) and St. Adolph (33). City parks and other areas on the Red, Seine and Assiniboine rivers have produced several specimens and recent nest records. (All: Copland, *pers. comm.*) Screech-owls have been recorded on CBCs yearly since 1979 (*Am. Birds*).

Eastern Forest. Taylor describes some historical screech-owl records from Brokenhead (Fig. 2: 34) and the Whitemouth (35) area, including a nest observed in 1931 near Whitemouth.⁴² There

is no evidence that screech-owls are regular breeders in this part of Manitoba.

NORTH DAKOTA. Marshall and others include all of North Dakota within the range of the Eastern Screech-Owl. Johnsonsgard includes only the area east of the Missouri River and the Turtle Mountains.¹⁶ There are scattered records from western North Dakota, where the eastern portion is within the continuous screech-owl range. Screech-owls are much more common than is indicated in the literature, and they are, in fact, generally distributed, at least in the eastern two thirds of the state (G. Berkey, *pers. comm.*).⁴¹ A list of almost 100 sightings dating chiefly from 1979 formed the basis of the North Dakota account (Berkey, *pers. comm.*). Table 4 summarizes 1987 records from the upper Souris River north of the Saskatchewan border.

Souris and Des Lacs rivers. The Des Lacs River, which joins the Souris at Minot, and the Souris River are the source of records within 100 km of the concentration just over the Saskatchewan border. Kenmare (Fig. 2: 12), on the Des Lacs River, has several pre-1975 winter screech-owl records (*Am. Birds*; Berkey, *pers. comm.*). There is a 1979 breeding record for Carpio (13), further to the southeast on the Des Lacs River (Berkey, *pers. comm.*).

In Minot (15) screech-owls have been recorded regularly on CBCs since 1979. G. Berkey and R. Martin have been censusing screech-owls by the use of tape playbacks for several years. Numerous territorial screech-owls occur in the almost continuous riparian woodland along the Souris River between Burlington and Velva (14-16). Adults with young were observed at Burlington in 1986 and young birds have been seen in Minot's Oak Park in 1983 and 1984. A gray-phase owl was photographed at Velva in January 1982 (All: Berkey, *pers. comm.*).

At Velva, the Souris River turns northeast, flowing through McHenry County (17), where there are several records of responses to tape playbacks (Berkey, *pers. comm.*; Martin). The Jack Salyer National Wildlife Refuge (NR)(18), on the Souris River south of the Turtle Mountains, is the probable source of several pre-1972 records of territorial males or pairs, indicating breeding in this portion of the river.⁴¹

A survey of a 24-km stretch of the Souris River between U.S. Hwy 5 northeast of Tolley and the Saskatchewan border east of Northgate by Adam on 4 April 1987 resulted in eight new records for territorial screech-owls (Table 4, 1-11). This portion of the river is north of the Upper Souris NWR and is continuous riparian woodland extending into Saskatchewan. Owls are absent from the extensive flooded portions of the 48-km-long refuge, except at the northern end, where records exist east of Arpio and east of Foxholm (Berkey, *pers. comm.*).

Turtle Mountains. These extend south into North Dakota from Manitoba. Turtle Mountain Provincial Park, which is east of Lyleton, is the site of several screech-owl breeding records. The Turtle Mountains (Fig. 2: 19) are the site of several pre-1972 records of territorial males or pairs.⁴¹ There are three recent records from Bottineau (20) and two recent records from Dunseith (21) (Berkey, *pers. comm.*; *Am. Birds*).

Numerous screech-owl records in eastern North Dakota centre on Grand Forks (Fig. 2: 22) and Fargo (23) on the Red River (*Am. Birds*; Berkey, *pers. comm.*). Nests and young have been found in several eastern counties.⁴¹ Owls responded to taped calls along the Red River between Jamestown (24) and LaMoure (25) (*Am. Birds*: 311-313). Jamestown is the site of numerous records and at least one summer

(*Am. Birds*; Berkey, *pers. comm.*). Current population estimates for the Red River (26) and its tributaries indicate more than one breeding pair of Eastern Screech-Owls per river-mile (D. Lambeth, *pers. comm.*).

Central. Missouri and Knife rivers. About 75 km south of Minot is a concentration of records from the Missouri and Knife rivers in central North Dakota. Knife River records include fledglings and singing birds at Hazen (Fig. 2: 27) and a pair at Beulah (28). Other recent records are from the Garrison Dam-Lake Sakakawea area (29; fall-winter) and Bismark-Mandan area (30; winter). Long Lake NWR (31) is the probable site of earlier breeding records.⁴¹ There is also a recent summer record from Elgin (32). (All: Berkey, *pers. comm.*, and *Am. Birds*).

West. Hettinger (Fig. 2: 33), near the South Dakota border, is the site of recent breeding and other records. Earlier records of singing males or pairs are from Billings and Stark counties (34).⁴¹ Little Missouri River records are from Medora (35; winter) and Theodore Roosevelt National Park (36, 37; spring, fall and winter). (All: Berkey, *pers. comm.*, and *Am. Birds*).

MONTANA. Marshall and Scott place the eastern extent of the Western Screech-Owl range along the Continental Divide in Montana's Rocky Mountains.^{21 33} Holt and Hillis, recent records from *American Birds* and the status by latitude of both Western and Eastern in Skaar indicate that the Western is restricted to the mountains west of the Continental Divide, but also occurs in the Bozeman-Ennis area to the east, in the region of the Missouri and Yellowstone river headwaters. There are also Eastern Screech-Owl records for this latter region.^{14 35}

Milk River. The Milk River, which joins the Missouri near Fort Peck, has scat-

tered screech-owl records from the Glasgow area (Table 5: 3-6), the Malta area (12-14), including the Bowdoin NWR (probably a non-breeding record, as treed habitat is generally lacking), and Havre (8). The Milk River is the probable source of three recent Saskatchewan records: Eastend (Table 2: 125,126) via the Frenchman River from the Malta-Glasgow-Fort Peck area and Cypress Hills (Table 2: 127) via the Battle River from the Havre area.

The Havre owls were seen in the city's Pepin Park in winter and were probably Eastern Screech-Owls (C. Hoff, *pers. comm.*). Adam and Fitzgerald played taped calls at the park 22 April 1987 and in riparian woodland west of Havre; no owls responded.

A definite Eastern responded to taped calls at Glasgow, 21 April 1987 (Adam, Fitzgerald and C. Carlson of Fort Peck). The Milk River was also censused 23 April 1987 at Vandalia, northwest of Glasgow; within the town of Malta (with D. Prellwitz) and in a few riparian woodlands north of Malta; no owls responded.

Missouri River. Records for the Missouri River region are very few, and include Fort Peck (Table 5: 2), near the junction of the Milk River. There is a recent record for Lewistown (11), also unconfirmed records for Lewistown (10), Great Falls (7) and Plentywood (15) latilongs; a record for the Jordan latilong (9); and a probable breeding record for Choteau latilong (1). Adam, Fitzgerald and Carlson censused likely spots along the Missouri River 21 April 1987; no owls responded.

On 22 April 1987 Adam and Fitzgerald confirmed an Eastern where a Western had been seen on a 1982 CBC south of Chester (Table 5: 16,17). Harriet Marble of Chester provided the exact location as Sandford Park, at the Tiber Dam on the Marias River (a tributary of the Missouri River) south of Chester.

Two Easterns (both gray-phase) flew when taped calls were played; whines and warbles typical of the Eastern were heard. A photograph of one owl revealed a yellow-grey bill and the typical *maxwelliae* plumage. These owls may have dispersed up the Marias River from the Missouri, but were stopped by the barrier of the Tiber Dam and Lake Elgin.

Yellowstone River. Records for the Yellowstone River are few and include Moccasin City (Fig. 2: 18), Hysham (19), Hurley (20) and Joliet (21).

ALBERTA. Although most of the Alberta birds may be Eastern Screech-Owls, I have not confirmed any of them and scattered records in Fig. 2, ranging from Swan Hills to Cardston and Waterton Lakes National Park, are not discussed in this paper.^{31 32}

Conclusions

Investigations into the range and status of Eastern Screech-Owl in Saskatchewan have shed some light on the situation in Manitoba, North Dakota and Montana. Alberta has not been examined as closely, due to the relative lack of data. The range delineation (Fig. 2, stippled areas) is still tentative, pending further documentation. The situation is complicated by the fact that the Western was split from the Eastern Screech-Owl only in 1983; earlier records are not readily separated.²

It is clear that the Souris River in southeastern Saskatchewan is the core of the range in this province, with peripheral areas such as Moose Jaw, Regina, Yorkton and Duck Mountain having scattered and fluctuating populations. Some isolated records indicate dispersal in winter from the Souris River or movement along the valley to other areas. Similar movements may account for screech-owls along the Qu'Appelle and Assiniboine rivers (Yorkton and Duck Mountain). However, their pos-



Souris River Valley

Bob Godwin



lee, Souris River Valley

Bob Godwin

ence in Regina and Moose Jaw may be better explained by birds moving between the Souris system and the Moose Jaw River and Wascana Creek.

The tentative range presented in Fig. 2 (stippled area) indicates that the Eastern occurs locally westwards along the Yellowstone, Missouri and Milk rivers and that some owls have strayed into southeastern Saskatchewan, probably via the Frenchman and Battle rivers. These peripheral areas may be part of an occasionally inhabited traditional range or they may represent actual range extensions or accidental occurrences. The former occurrences of screech-owls near Regina indicate that the species may occasionally die off or pull back to more favourable habitat.

The Saskatchewan population appears low and scattered, as would be expected at the northwestern edge of the species' range. It could total 30 pairs; it is probably no more than 50 pairs.

An examination of the eastern and western species' ranges raises some interesting questions, especially for central and western Montana and southwestern Saskatchewan. Is the Eastern moving west or has the species always occupied its far western locations, remaining undetected until now? Are the Alberta owls, most of which are old records, Eastern, or are some of them Western? Further studies along the Saskatchewan-Montana border may provide some answers.

Table 2. SASKATCHEWAN EASTERN SCREECH-OWL RECORDS THROUGH 1987

SOUTHEAST - *Central Souris River - Estevan to Pinto*

1. Estevan, south. Spring/31. By H. Williamson (Sask. Mus. Nat. Hist. (SMNH)). Boys flushed owl from hollow tree; two eggs. N. Saw-whet Owl? Hypothetical.
2. Estevan, south. June, July/74. By B. Godwin (*pers. comm.*). Calls from nursery. Territorial.
3. Estevan, Woodlawn Regional Park. 10/04/86. By R. Belanger (*pers. comm.*), N. Postey. Whinnies and warbles; four owls (two pairs?). Territorial.
4. Estevan, Woodlawn Regional Park. 21/04/86. By C. Adam, S. Fitzgerald. Whinny and warble tape response; two owls; windy, traffic. Territorial.
5. Estevan, 9kmSE. 09/04/85. By Adam, S. Fitzgerald. Three whinnies at distant farm; tape response. Territorial.
6. Estevan, 9kmSE. 21/04/86. By Adam, S. Fitzgerald. Warbles near farm; tape response; owl moved closer. Territorial.
7. Roche Percee, 5kmW. 21/04/86. By Adam, S. Fitzgerald. Distant warbles; tape response. Territorial.

Table 2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS
ROUGH 1987

8. Bienfait. 11/85. By A. Rohatyn (*pers. comm.*). Small owl with ear tufts flew into the near house; night. Hypothetical. Nonterritorial.
9. Roche Percee area. 18/08/26. By H. Mitchell, F. Bard (SMNH). First SMNH specimen (#1876); imm. male, gray phase; some down. Nonterritorial.
10. Roche Percee area. 24/08/26. By F. Bard (SMNH). "Heard...several times." Territorial.
11. Roche Percee area. 26/12/31. By T. Siddal (SMNH). Gray-phase female; specimen (#2956); mount no longer at SMNH. Nonterritorial.
12. Roche Percee, 1kmSW, Short Ck. 09/04/85. By Adam, S. Fitzgerald (D. Hjertaas, *pers. comm.*). Pair singing duets; tape response; not heard 25/05/85 (D. Hjertaas, *pers. comm.*). Territorial.
13. Roche Percee, 4kmE. 22/04/86. By Adam, S. Fitzgerald. Warbles from a pair; tape response; campground; distant whinny. Territorial.
14. Roche Percee, 4kmE. 25/05/85. By D. Hjertaas (*pers. comm.*) & P. Hjertaas. Singing several times near midnight at campground. Territorial.
15. Pinto, 2kmNW. 22/04/86. By Adam, S. Fitzgerald. Six warbles; slow response to tape. Territorial.
16. Pinto, 1kmN. 22/4/86. By Adam, S. Fitzgerald. Whinnies; slow response to tape; windy; same as #17? Territorial.
17. Pinto, 1kmN. 29,30/4/86. By W. Harris (*pers. comm.*); C. Dodge. Warbles; a pair; 30/04: perch, pellets found; same as #16? Territorial.
18. Pinto, 5kmE, 4N. 10/04/85. By Adam, S. Fitzgerald. Warbles; tape response. Territorial.
19. Pinto, 5kmE, 4N. 22/04/86. By Adam, S. Fitzgerald. Warbles; tape response. Territorial.

SOUTHEAST - *Eastern Souris River - Oxbow*

20. Oxbow, Souris River. -/-/20. By H. Mitchell(?). Reported as "apparently rare." Hypothetical. Nonterritorial.²²
21. Oxbow, 6kmSW. 20/4/87. By Adam, S. Fitzgerald, K. Mahan. Warbles; gray-phase owl seen up close; tape response. Territorial.
22. Oxbow, 5kmSW (Mahan farm). 11/4/85. By Adam, S. Fitzgerald. Warbles; tape response. Territorial.

Table 2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS THROUGH 1987

23. Oxbow, 5kmSW (Mahan farm). 20/4/87. By Adam, S. Fitzgerald, K. Mahan. Close warbles; distant whinnies; tape response. Territorial.

24. Oxbow, 4kmSW (Mahan farm). 11/04/85. By Adam, S. Fitzgerald. Whinnies, warbles from pair; tape response; no response 1987. Territorial.

25. Oxbow, 4kmSW (Mahan farm). 23/04/86. By Adam, S. Fitzgerald, K. Mahan (*pers. comm.*). Gray-phase owl called; tape response; also heard 03-04-86. Territorial.

26. Oxbow, 4kmSW (Mahan farm). 20/04/87. By Adam, S. Fitzgerald, K. Mahan. Warbles from gray phase; tape response; also heard 25/08/87 (K. Mahan, *pers. comm.*). Territorial.

27. Oxbow, 4kmS. 22/04/87. By Adam, S. Fitzgerald, K. Mahan. Warbles from probable gray-phase owl; tape response; near oil rig. Territorial.

28. Oxbow, 6kmS (farm). 23/04/86. By Adam, S. Fitzgerald, K. & M. Mahan. Warbles from gray phase; tape response. Territorial.

29. Oxbow, 7kmS. 23/04/86. By Adam, S. Fitzgerald, K. & M. Mahan. Warbles from gray phase; tape response. Territorial.

30. Oxbow, 10kmS. 18/05/65. By C. Elliott (SMNH). Specimen # 9350; immature phase male. Territorial.

31. Oxbow, 7kmW. -/12/84. By D. Moore & R. Eagles (*pers. comm.*). Owl chasing sparrow hit van 11 p.m. (Moore); mount in Estevan (Eagles); photos. Nonterritorial.

32. Oxbow, 3kmN. 08/02/85. by H. Paton (*pers. comm.*) & K. Paton (*Am. Orn.* 39:179-180). "Tawny" Eastern Screech-Owl at farm, sunning in spruce, afternoon. Nonterritorial.

SOUTHEAST - *Eastern Souris River - Glen Ewen*

33. Glen Ewen area. 12/10/27. By D. Soper. Sight record. Nonterritorial.

34. Glen Ewen, 3kmS, 4W. 24/04/86. By Adam, S. Fitzgerald. Warbles from gray phase; tape response; no response to whinnies. Territorial.

35. Glen Ewen, 16kmS. 12/04/85. By Adam, S. Fitzgerald. Whinnies, warbles from pair; tape response; same as #36. Territorial.

36. Glen Ewen, 16kmS. 24/04/86. By Adam, S. Fitzgerald. Warbles from gray phase; tape response; same as #35. Territorial.

37. Glen Ewen, 16kmS. -/1987. By G. McFarland (P. James, *pers. comm.*). Gray-phase specimen picked up by local farmer. Nonterritorial?

e 2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS
OUGH 1987

B. Glen Ewen, 18kmS. 12/04/85. By Adam, S. Fitzgerald. Warbles from both
s of river; tape response; same as #39. Territorial.

9. Glen Ewen, 18kmS. 24/04/86. By Adam, S. Fitzgerald. Warbles; tape
onse; same as #38. Territorial.

0. Glen Ewen, 19kmS. 12/04/85. By Adam, S. Fitzgerald. Warbles; tape
onse; same as #41. Territorial.

. Glen Ewen, 19kmS. 24/04/86. By Adam, S. Fitzgerald. Warbles from
able gray phase; tape response; same as #40. Territorial.

r. Glen Ewen, 20kmS. 24/04/86. By Adam, S. Fitzgerald. Warbles from red
e; tape response as #41 calling. Territorial.

. Glen Ewen, 21kmS. 24/04/86. By Adam, S. Fitzgerald. Warbles from red
e; tape response. Territorial.

THEAST- *Upper Souris River*

. Midale, 4kmSW. -/01/85. By Mrs. J. Hoium (*pers. comm.*). Owl stunned after
window; released; photo. Nonterritorial.

. Weyburn. 26/03/85. By R. Belanger+ (*pers. comm.*). Faint calls from possible
ape response. Hypothetical. Territorial.

Trossachs, 2kmN. 17/04/86. By R. Belanger (*pers. comm.*), N.Postey+.
ies, then warble; tape response; traffic noise. Territorial.

Elmore, ca 8kmNE. 17,31/08/22. By H. Mitchell (SMNH). Calls; prob. wooded
R. Valley at 1-31-W1.²² Territorial?

Gainsborough. 28/01/48. By D. & R. Shaw, J. Reynolds (SMNH). Sight
. Hypothetical. Nonterritorial.

Gainsborough. 02/04/48. By J. Reynolds (SMNH). Sight record. Territorial?

Wauchope. 17/03/35. By H. Pittman. Single bird in barn.²⁴ Nonterritorial.

Wauchope. -/10/40. By M. Nixon (M. Nixon notes; S. Houston, *pers. comm.*).
heard; rare; has occurred since poplar groves spread into area. Nonterritorial.

Wauchope. 20/03/41. By H. Pittman. Single bird found in barn.²⁴ Nonter-

White Bear L., Moose Mt. Prov. Park. 21/05/42. By D. Soper. Songs heard.⁴⁰
erial.

Table 2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS THROUGH 1987

54. Carlyle, N. 27/06/66. By G. Bennett (*pers. comm.*). Calls heard from hamburger stand, Hwy 9. Territorial.

55. Kipling. 22/04/79. Observer unknown (P. James, *pers. comm.*; SM 1). Specimen #11089 received from Kipling veterinarian; power line kill. Nonterritorial.

56. Percival, 5kmE (Callin farm). 03/02/33. By E. M. Callin+ (*pers. comm.*). Small eared owl in maple grove in moonlight. Nonterritorial.⁵

57. Wapella, 8kmS, Pipestone Ck. 02-03/86. By L. Neilson (*pers. comm.*). Small eared owl at farm 6 days; warbles from ravine nearby 08/05/86. Hypothetical. Territorial.

CENTRAL - Moose Jaw - Moose Jaw River

58. Moose Jaw, Wellesley Pk. 22/08/79. By J. Williams, R. Kreba, F. Lahrman (L. Knight & R. Kreba, *pers. comm.*). Baby owl in chimney taken to Moose Jaw Wildlife Animal Park; 03/09/79: identified by Kreba & Lahrman as gray phase.³ Territorial.

59. Moose Jaw, Wellesley Pk. 29/03/80. By R. Luterbach (R. Kreba, *pers. comm.*). Red-phase owl seen; whinnies; tape response. Territorial.

60. Moose Jaw, South Hill. 03/01/81. By E. Tanner (L. Knight, *pers. comm.*). Probable red phase seen in yard from 1 m. Hypothetical. Nonterritorial.

61. Moose Jaw, Wellesley Pk. Spring/84. By R. Luterbach (*pers. comm.*). Singing. Territorial.

62. Moose Jaw, Wellesley Pk. 17,24/04/85. By Adam, R. Luterbach, C. Elliott (*pers. comm.*). 17/04: occasional warbles, tape response; 24/04: regular. Territorial.

63. Moose Jaw, Wellesley Pk. 04,06/05/86. By Adam, R. Luterbach, R. Kreba, S. Fitzgerald. 04/05: gray-phase owl seen, tape response; 06/05: warbling, c. k. Territorial.

64. Moose Jaw, Wellesley Pk. 04/04/87. By Adam, S. Fitzgerald. Warbles started at dusk; gray-phase owl seen. Territorial.

65. Moose Jaw, Wellesley Pk. -/05-06/87. By D. Cole & D. Hjertaas (*pers. comm.*). Owl flew from nest hole, not checked; prob. this species, but unconfirmed. Hypothetical. Nonterritorial.

CENTRAL - Northwest of Regina

66. Moose Jaw R., 1kmSE Qu'Appelle R. 17/04/85. By Adam. One distant warble near farm; tape response; no response 22/04. Territorial.

67. Qu'Appelle R., 2kmE Moose Jaw R. 04/04/87. By Adam, S. Fitzgerald. Warbles from gray-phase owl; distant whinnies; tape response. Territorial.

le 2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS
ROUGH 1987

8. Tregarva, near Flying Ck. 31/12/31. By M. Zummach, N. Clark (SMNH). Male red-phase specimen #2957 on display; first record of red phase in Sask.³ Territorial.

9. Craven, Qu'Appelle R. -/02/33, by Mr. Marklinger (SMNH). Owl shot from building; specimen location unknown. Hypothetical. Nonterritorial.

10. Regina Beach. 13+/01/79. By J. Sinclair, D. Gilroy, F. Lahrman (R. Kreba, *pers. comm.*). Gray phase at cottage 13,22/01; 7,18/02; photos. Nonterritorial.

11. Regina Beach. 27/03/79. By D. Gilroy (R. Kreba, *pers. comm.*). Singing owl in town; same as #70? Territorial.

TRIAL - Regina Area: Wascana and Cottonwood Cks, Sherwood Forest

12. Qu'Appelle River Valley, 3kmNE Lumsden. 21/09/87. By D. Gejdes (P. es, *pers. comm.*; SMNH). Gray phase found on Hwy 20; SMNH specimen 64. Nonterritorial.

13. Cottonwood Ck., 8kmSW Lumsden. 20/03-10/05/80. By R. Luterbach+ (R. a, *pers. comm.*). Gray- and red-phase pair seen; calls; tape response. Territo-

14. Cottonwood Ck., 8kmSW Lumsden. 17/02-18/04/81. By R. Luterbach, n, R. Kreba (*pers. comm.*). Gray-phase owl seen; duet calls from pair. orial.

15. Cottonwood Ck., 8kmSW Lumsden. -/02-05/82. By R. Luterbach, Adam+. les. Territorial.

16. Wascana Ck., 5kmSW Lumsden. 3,19/04/83. By R. Luterbach, Adam, A. R. n. 04/83: heard occasionally, "Saw-whet Bridge"; 03/04: warbles every 30 sec. orial.

17. Wascana Ck., 5kmSW Lumsden. -/03/84, 04/04/84. By W. Russon, T. an, R. Kreba (*pers. comm.*). Heard occasionally, "Saw-whet Bridge". Territo-

18. Sherwood Forest, Wascana Ck., 16kmS Lumsden. 01/04/79. By R. Luter- (R. Kreba, *pers. comm.*). Whinnies; first of series of Regina area owls.³ orial.

19. Sherwood forest, Wascana Ck., 16kmS Lumsden. Spring/81. By R. Luter- Adam+. 22/02: pair, one gray phase; 14/04: whinnies, warbles from pair. orial.

20. Sherwood Forest, Wascana Ck., 15kmS Lumsden. -/03,04/81. By R. bach, Adam. Pair duetting. Territorial.

Table 2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS THROUGH 1987

81. Sherwood Forest, Wascana Ck., 16kmS Lumsden. Spring/83. By Adam R. Luterbach, J. Triffo (*pers. comm.*), A. Smith (*pers. comm.*). Gray-phase owl singing from hole; 04/04: photos; sang once noon. Territorial.

82. Sherwood Forest, Wascana Ck., 16kmS Lumsden. 09/01/84. By S. Johnston, E. Wiltse, R. Luterbach, Adam. Starving red-phase owl donated to Moose Jaw Wild Animal Pk.; 18/04 released; 04/05 no response. Nonterritorial.

83. Sherwood Forest, Wascana Ck., 16kmS Lumsden. 18/03/85. By R. Luterbach, R. Kreba (*pers. comm.*). Five to six warbles at dusk. Territorial.

CENTRAL - Regina City

84. Regina? -/03/04. Observer unknown. Specimen of red-phase owl in Chicago Nat. Hist Mus., described by D. Owen.^{3 4} Nonterritorial.

85. Regina. 18/12/32. By F. Bard (SMNH). Sight record.³ Nonterritorial.

86. Regina, downtown. 12/03/34. By F. Bard (SMNH). Gray-phase specimen #3362 from store basement; on display at SMNH.³ Nonterritorial.

87. Regina, nr Victoria Pk. 06/11/35. By E. Knowles (SMNH). Red-phase owl seen.³ Nonterritorial.

88. Regina, downtown. Fall/40. By Mrs. J. Couturier, F. Bard (SMNH). Red-phase owl at house.³ Nonterritorial.

89. Regina, Wascana Pk. 17/10/61. By R. Sanderson, W. Fleming, E. Fox. Red-phase owl in small spruce; gone next day.^{3 8} Nonterritorial.

CENTRAL - Central Qu'Appelle River Valley

90. Fort Qu'Appelle, near. 28/02/45. By E. M. Callin. Gray-phase owl seen at arms length.⁵ Nonterritorial.

91. Fort San. Winter 1959/60. By F. Johnson. Owl seen, close range in corner at hospital.⁵ Hypothetical.

92. Near Katepwa. 19-21/08/75. By D. Hjertaas. 19/08: heard two different calls 3 km apart; 21/08: one heard.⁵ Territorial.

93. Katepwa Provincial Pk. 21/04-04/06/80. By D. Hjertaas (*pers. comm.*). Owl heard all spring by field crew; never seen. Territorial.

NORTHEAST - Yorkton and Area

94. Yorkton. 08/04/40. By I. Priestly (S. Houston, *pers. comm.*). Calls identified in retrospect, "The Muskeg."^{15 30} Hypothetical. Territorial.

2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS
THROUGH 1987

5. Yorkton. 25/01/41. Observer unknown (S. Houston, *pers. comm.*). Small owl
calling rink; prob. not Eastern.^{15 30} Hypothetical. Nonterritorial.
6. Yorkton. 22/02/41. By I. Priestly (S. Houston, *pers. comm.*). Calls heard at
Mage's Farm, beside 'The Muskeg.'^{15 30} Hypothetical. Nonterritorial.
7. Yorkton. 18/02/42. By I. Priestly (S. Houston, *pers. comm.*). Sight record from
⁵ Hypothetical. Nonterritorial.
8. Yorkton. 15/11/45. By C. Shaw+ (S. Houston, *pers. comm.*). Owl banded in
garden.¹⁵ Nonterritorial.
9. Yorkton. -/05/46. By J. Allen (S. Houston, *pers. comm.*). Small owl; nest with
egg; prob. saw-whet owl.¹⁵ Hypothetical. Territorial.
10. Yorkton. 01/02/51. By C. Shaw, D. Darling. Gray-phase owl observed in
noon; later found dead.³⁴ Nonterritorial.
11. Yorkton. 19/02/51. By C. Shaw. Second gray-phase owl found dead.³⁴
territorial.
12. Yorkton. -/01-02/86. By K. Wood, L. Irvine (*pers. comm.*). Injured bird at
Inarian's; later died, disposed of, no details. Hypothetical. Nonterritorial.
13. Rokeby. -/-/57. By G. & D. Kreba. Small owl holding mouse. Hypothetical.¹⁹
territorial.
14. Saltcoats, 1kmE, 11N. 18,24/01/87. By W. Hjertaas, J. Jowsey (*pers.*
comm.). Gray-phase owl calling, upland area; photos. Territorial.
15. MacNutt, near. -/02-03/85. By A. Markowsky (*pers. comm.*). Small ear-
d owl on garage; looked like cat. Hypothetical. Nonterritorial.
16. Dunleath, E of Yorkton. -/12/85. By W. Hjertaas (*pers. comm.*). Red-phase
in farm spruce tree; photo; present several weeks.¹³ Nonterritorial.
17. Springside, 6kmE, Cussed Ck. 15/04/86. By W. Hjertaas (*pers. comm.*), L.
Whinnies; tape response. Territorial.
18. Springside, 16kmNE. 15-16/03/80. By T. Kenway, W. Anaka, (*pers. comm.*).
Red owl photographed along rural road; donated to Moose Jaw Wild Animal Park.
territorial ?
19. Canora. 08/03/86. By R. Krukoff (C. Pollock, *pers. comm.*). Gray-phase owl
near house; photo: *Canora Courier* 12/03/86.²⁸ Nonterritorial.

Table 2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS
THROUGH 1987

NORTHEAST - *Duck Mountain Provincial Park (DMPP) and Area*

110. DMPP, NW Batka L. 03/06/81. By D. Hatch, D. Weidl (*pers. comm.*). Warbles 0400h; white spruce-aspen woods.¹² Territorial.

111. DMPP, Core Area. -/06/86. By N. Caulkett (*pers. comm.*). 06/06: heard at golf course; 16,20/06: heard at entry gate. Territorial.

112. DMPP, Core Area; Green L. Rd. 23/05/87. By R. Kreba (*pers. comm.*), R. Ewart, L. Bjorklund. Warbles at two locations, 0315h; 0400h. Territorial.

113. Lac La Course, near. 27/05/42. By D. Soper. Songs.⁴⁰ Territorial.

NORTH - *Extralimital Records*

114. High Tor, S of Greenwater Prov. Pk. 1940s. By B. Hayunga (D. Hooper, *pers. comm.*). Heard "screech"; small gray owl with ear tufts seen; aspen bluff. Hypothetical. Nonterritorial.

115. McBride Lake, 8kmE. 26/06/79. By W. Harris (*pers. comm.*), R. Mer. Warbling owl heard briefly in wooded Pepaw R. Valley, Porcupine Hills. Territorial.

116. Punnichy, 13kmS. 14/04/71. By W. Harris (*pers. comm.*). "Eastern-like" from owl, Touchwood Hills. Territorial.

117. Manitou Beach. 21/08/87. By P. James (*pers. comm.*). Songs from supple woodland; identified later from tape. Territorial.

118. Saskatoon. -/03/73. By W. Harris (*pers. comm.*), S. Lamont. Western Screech-Owl?; calls; compared to Boreal and saw-whet owls calling at same time. Hypothetical. Territorial.

119. Saskatoon, 4.8kmN, South Sask. R. 20/08/77. By R. Rafuse (*Saskatoon Field Notes* 6(3):8). Owl "found" along river. Nonterritorial.

120. Turtle L., W side. 02/06/87. By R. Taylor, D. MacAskill (M. Carlson, *pers. comm.*). Typical calls heard 1.6kmN Turtle L. campground. Territorial.

121. Turtle L., E side. 12/05/87. By M. Carlson (*pers. comm.*), J. Jansen. Probable Eastern heard; late afternoon. Hypothetical. Territorial.

122. Shellbrook. -/03/87. Observer unknown (P. James, *pers. comm.*; SM). Gray-phase specimen #15118 found in grain elevator. Nonterritorial.

SOUTHWEST - *Frenchman River - Cypress Hills*

123. Frenchman R., 35kmSE Val Marie. 05/06/81. By P. Browne (*pers. comm.*), W. Lynch. Owl singing most of night, river bottom willows. Territorial.

2 (cont). SASKATCHEWAN EASTERN SCREECH-OWL RECORDS
THROUGH 1987

24. Frenchman R., Eastend, 7kmSW. Winter/1903-04. By L. Potter. Sight
d, first for Sask.^{22 29} Nonterritorial.
25. Eastend. -/03-05//86. By R. Jerema (*pers. comm.*). Warbles from yard; song
ified over phone. Territorial.
26. Eastend. Spring/87. By Adam, R. & R. Jerema, W. Harris (*pers. comm.*). Owl
d in yard willows 01/04 (Adam), 15/04 (Harris). Territorial.
27. Cypress Hills Prov. Pk., West Blk. 15/12/85. By W. Harris (*pers. comm.*).
-billed owl (sp?) seen on Fort Walsh CBC; upland near Battle Ck., dusk.
thetical. Nonterritorial.

CELLANEEOUS RECORDS

28. Saskatchewan, probable. 1940s? Observer unknown (SMNH;P. James,
comm.). Red-phase skin #5399, prob. late 1940s; discarded 1964; no further
s.
29. Location unknown. 10/11/82. Observer unknown (SMNH). Specimen
43 received from Moose Jaw Wild Animal Park; no data; one of two owls handed

3. EASTERN SCREECH-OWL RECORDS FROM SOUTHWESTERN
ITOBA

- Brandon. Winter/83-85. By C. Cuthbert (*pers. comm.*). Gray phase seen.
- Lyleton. 09/01/73. By J. Murray. One bird.¹⁸
- Lyleton. 19/01/83. By J. Murray (*Am. Birds* 38:329-330). Red phase.
- Lyleton. -/01/84. By J. & J. Murray, C. Cuthbert (*pers. comm.*). Red phase
en twice in town.
- Lyleton. 15/04/74. By J. Murray. One bird.¹⁸
- Lyleton. -/06/86. Observer unknown (J. Murray, *pers. comm.*). Two
g near probable nest; trees cut.
- Lyleton. Summer/76. Observer unknown. Adult bird heard often.¹⁸
- Lyleton. 1/11/72. By J. Murray. One bird.¹⁸
- Lyleton, 4kmSE. 19/05/86. By R. Walker (J. Murray & C. Cuthbert, *pers.*
mm.). Downy young in shelterbelt.

10. Lyleton, 3kmN. 05/06/76. By R. Koes, R. Knapton. Adult, two flightless young; woodlot.¹⁸

11. Oak Lake. 28/12/69. By D. Hatch (*Audubon Field Notes* 24:121). O. screech-owl (sp?)

12. Oak Lake. 21/12/74. By D. Hatch (*Am. Birds* 29:200). Screech-owl. (sp?)

13. Oak Lake. 02/01/78. By D. Hatch (*Am. Birds* 32:471). Screech-owl (sp?)

14. Pipestone. Winter/81-82. By V. Edwards (B. Ratcliffe, *pers. comm.*). Photo of Eastern in barn.

15. Reston. 03/05/84. By D. Braddell (*pers. comm.*). Red phase near pa

16. Reston. 19/06/74. By D. Braddell (*pers. comm.*). Near park.

17. Reston. Summer/80s. By unknown observer (D. Braddell, *pers. comm.*). Broods annually.

18. Reston area. 08/01/83. Observer unknown (D. Braddell, *pers. comm.*). No details.

19. Reston, 5kmN. 13/04/80. By D. Braddell (*pers. comm.*). In hollow tree. No details.

20. Riding Mountain National Park. -/-/. By R. Walker. "Very rare."^{26 39}

21. Rivers, NW. 17/01/83. By V. Corbey, N. Short (C. Cuthbert, *pers. comm.*). Gray phase in spruce.

22. Rivers, 5kmSE. 08/12/85. By N. Short, C. Cuthbert (*pers. comm.*). G. phase found dead.

23. Sinclair, near. 15/11/83. By C. Cuthbert (*pers. comm.*). Typical calls heard in morning.

Table 4. NORTH DAKOTA EASTERN SCREECH-OWL RECORDS: SOUR RIVER AT SASKATCHEWAN BORDER, 1987

1. Burlington, 3miN,1W. 13/04/87. By Adam. One heard; tape response.

2. Burlington, 4miN,2W. 13/04/87. By Adam. One heard; tape response.

3. Tolley, 3miNW. 14/04/87. By Adam. Gray phase; photographed.

4. Tolley, 6miN. 14/04/87. By Adam. One heard; tape response.

Tolley, 10miN,3W. 14/04/87. By Adam. One heard; tape response.

Northgate, 14miE,5S. 14/04/87. By Adam. Pair heard; tape response.

Northgate, 14miE,5S. 14/04/87. By Adam. One heard; tape response.

Northgate, 14miE,4S. 14/04/87. By Adam. Gray phase; excited
 nies, warbles; tape response.

Northgate, 14miE,3S. 14/04/87. By Adam. One heard; tape response.

0. Northgate, 14miE. 14/04/87. By Adam. Prob. two gray-phase owls
 e by at border.

. Foxholm, 3miE. Upper Souris Nat. Wild. Ref. 13/04/87. By Adam. One
 d; tape response.

5. MONTANA SCREECH-OWL RECORDS: SOUTHERN AND MILK RIVERS

Choteau latilong. -/-/. Observer unknown. Eastern Screech- Owl;
 umstantial breeding evidence."³⁵

Ft. Peck. 08/07/82. By L. Malone. Eastern;"questionable records."³⁵

Glasgow. 08/12/79. Observer unknown. (*Am. Birds* 34:284-285). One
 ch-owl.

Glasgow. 21/04/87. By Adam, S. Fitzgerald, C. Cuthbert. Distant
 ern; whinnies, later warbles; tape response.

Glasgow latilong. -/-/. Observer unknown. Eastern;"no sign of
 ding".³⁵

Glasgow, 4miE. -/-/. By C. Cuthbert (*pers. comm.*). Screech-Owl, prob.
 ern.

Great Falls latilong. -/-/. Observer unknown. Eastern;"questionable
 ds."³⁵

Havre. 19/12/81. By C. Hoff (*pers. comm.*; *Am. Birds* 36:684). Two
 erns; Pepin Pk.

Jordan latilong. -/-/. Observer unknown. Eastern; "no sign of
 eeding."³⁵

. Lewistown latilong. -/-/. Observer unknown. Eastern;"questionable
 ds."³⁵

Table 5. (cont.) MONTANA SCREECH-OWL RECORDS:
MISSOURI AND MILK RIVERS

11. Lewistown, S of. 28/02/87. By L. Malone (*Am. Birds* 41:306). Eastern reported.
12. Malta. Spring/86. By D. Prellwitz (*pers. comm.*). Nest in residential area; -/09/86: seen again.
13. Malta. 27/05/79. Bowdoin Nat. Wild. Ref. By C. Cuthbert (*Am. Birds* 33:782-784). Two screech-owls at Wood Duck nest box; no habitat.
14. Malta latilong. -/-/-. Observer unknown. Eastern; "no sign of breeding."³⁵
15. Plentywood latilong. -/-/-. Observer unknown. Eastern; "questionable records."³⁵
16. Tiber Dam, S of Chester. 18/12/82. By H. Marble (*pers. comm.*; *Am. Birds* 37:696). One Western Screech-Owl.
17. Tiber Dam, S of Chester. 22/04/87. By Adam, S. Fitzgerald. Two c s; whinnies, warbles; tape response; photos.

LITERATURE CITED

- ¹ADAM, C. I. G. 1987. Status of the Eastern Screech-Owl in Saskatchewan with reference to adjacent areas. Pp. 268-276 in NERO *et al.* 1987. (See # 23).
- ²AMERICAN ORNITHOLOGISTS' UNION. 1983. Check-list of North American Birds, 6th edition. Allen Press, Lawrence, KS. 877 pp.
- ³BELCHER, M. 1980. Birds of Regina. Rev. edition. Spec. Pub. 12. Sask. Natural Hist. Soc., Regina, SK. 151 pp.
- ⁴BENT, A. C. 1938. Life histories of North American birds of prey. Part 2. Bulletin 170. Smithsonian Institution, U.S. Nat. Mus., Washington.
- ⁵CALLIN, E. M. 1980. Birds of the Qu'Appelle, 1857-1979. Spec. Pub. 13. Sask. Natural Hist. Soc., Regina, SK. 168 pp.
- ⁶CARPENTER, T. W. 1987. Effects of environmental variables on responses of Eastern Screech-Owls to playback. Pp. 277-280 in NERO *et al.* 1987. (See # 23).
- ⁷CORNELL LABORATORY OF ORNITHOLOGY. 1983. A field guide to birds, 2nd edition. Peterson Field Guide Series. Houghton Mifflin, Boston. 450 pp. (2 records.)
- ⁸FLEMING, B. 1962. Screech Owl at Regina. *Blue Jay* 20:4,33.
- ⁹GODFREY, W. E. 1966. The birds of Canada. Nat. Mus. Canada, Ottawa. 9 pp.
- ¹⁰_____. 1986. The birds of Canada. Rev. edition. Nat. Mus. Canada, Ottawa. 595 pp.
- ¹¹HARRIS, W. C., A. KABZEMS, A. L. KOSOWAN, G. A. PADBURY and J. ROWE. 1983. Ecological regions of Saskatchewan. Tech. Bull. 10. Forestry, Sask. Parks and Renewable Resources, Prince Albert, SK. 57 pp.

- TCH, D. and D. WEIDL. 1981. Fauna history of Duck Mountain Provincial Park, Saskatchewan. Prepared for Parks Development Branch, Sask. Tourism and Renewable Resources, Regina. David R. Hatch and Assoc. 95 pp.
- ERTAAS, W. 1986. Eastern Screech-owl near Yorkton. *Blue Jay* 44:47.
- LT, D. W. and J. M. HILLIS. 1987. Current status and habitat associations of forest in western Montana. Pp. 281-288 in *et al.* 1987. (See #23).
- USTON, C. S. 1949. The birds of the Yorkton district, Saskatchewan. *Can. Field-Nat.* 63:215-241.
- HNSGARD, P.A. 1979. Birds of the Great Plains. Breeding species and their distribution. Univ. of Nebraska Press, Lincoln, Nebraska. 539 pp.
- INSON, R. R., B. T. BROWN, L. T. HART and J. M. SIMPSON. 1981. Play-recorderings as a special avian censusing technique. Pp. 68-75 in RALPH, C. J. and J. COTT, Estimating numbers of terrestrial birds. Studies in Avian Biology. No. 6. Cooper Soc. Allen Press, Lawrence, KS.
- APTON, R. W. 1979. Birds of the Gainsborough-Lyleton region (Saskatchewan and Manitoba). Spec. Pub. 10. Sask. Natural Hist. Soc., Regina, SK. 72 pp.
- BA, G. 1957. Small but scary. *Blue Jay* 35:6.
- CH, P. J. and D. G. SMITH. 1984. Use of Eastern Screech-Owls (*Otus asio*) in open-space areas using tape-recorded song. *Am. Birds* 38:388-391.
- SHALL, J. T. 1967. Parallel variation in Eastern and Middle American screech owls. Found. Vert. Zoo., Monograph 1. 72 pp.
- CHELL, H. H. 1924. Birds of Saskatchewan. *Can. Field-Nat.* 38:101-118.
- O, R. W., R. J. CLARK, R. J. KNAPTON and L. H. HAMRE, editors. 1987. Biology and conservation of northern forest owls: symposium proceedings. Feb 3-7, 1987; Winnipeg, Manitoba. Gen. Tech. Rep. RM-142. U.S. Dept. Agric., Fort Collins, CO. 309 pp.
- ²⁴_____ and M. R. LEIN. 1971. Birds of Moose Mountain, Saskatchewan. Spec. Pub. 7, Sask. Natural Hist. Soc., Regina, SK. 55 pp.
- ²⁵NOWICKI, T. 1974. A census of Screech Owls (*Otus asio*) using tape recorded calls. *Jack-Pine Warbler* 52:98-101.
- ²⁶PARKS CANADA. 1974. List of birds. Riding Mountain National Park. Parks Canada, Dept. Indian and Northern Affairs, Ottawa.
- ²⁷PENAK, B. L. 1985. Status of the Eastern Screech-Owl (*Otus asio*) in Canada with an overview of the status in North America. Unpubl. Report. World Wildlife Fund Canada for Committee on the Status of Endangered Wildlife in Canada. 127 pp.
- ²⁸POLLOCK, C. 1986. An unusual visitor. *Blue Jay* 44:196.
- ²⁹POTTER, L. B. 1943. Bird notes from southwestern Saskatchewan. *Can. Field-Nat.* 57:69-74.
- ³⁰PRIESTLY, I. M. 1942. List of birds identified in Yorkton district in recent years. Comp. by I. M. Priestly. Arranged and mimeographed by C. S. Houston. Yorkton, SK. 5 pp. plus map.
- ³¹SADLER, T. S. and M. T. MYRES. 1976. Alberta birds 1961-1970. Occ. Paper 1, Natural History Section, Prov. Mus. of Alberta, Alberta Culture and Historical Resources, Edmonton, AB. 314 pp.
- ³²SALT, W. R. and J. R. SALT. 1976. The birds of Alberta. Hurtig, Edmonton, AB. 498 pp.
- ³³SCOTT, S. L. 1983. Field guide to the birds of North America. Nat. Geog. Soc., Washington. 464 pp.
- ³⁴SHAW, C. 1951. American Screech Owls. *Blue Jay* 9(2):22.
- ³⁵SKAAR, D., D. FLATH and L. S. THOMPSON. 1985. P.D. Skaar's Montana bird distribution. Rev. edition. Monograph 3, Montana Acad. of Sci., Supp. to the Proc., Vol. 44.

³⁶SMITH, D. G. 1987. Owl census techniques. Pp. 304-309 in NERO *et al.* 1987. (See #23).

³⁷_____ and B. MCKAY. 1984. The effects of weather and effort on Christmas Bird Counts of owls in Connecticut. *Am. Birds* 38:383-387.

³⁸_____, A. DEVINE and D. WALSH. 1987. Censusing screech owls in southern Connecticut. Pp. 255-267 in NERO *et al.* 1987. (See #23).

³⁹SOPER, J. D. 1953. The birds of Riding Mountain National Park, Manitoba, Canada.

Wildl. Manag. Bull., Ser. 2, No 6., Canada Wildlife Service, Ottawa. 54 pp.

⁴⁰_____. 1970. Unpublished field notes on the birds observed and collected in the province of Saskatchewan, Canada, in 1914-1927 and from July 1937 to September 1947.

⁴¹STEWART, R. E. 1975. Breeding birds of North Dakota. Tri-College Center for Environmental Studies, Fargo, ND. 295 pp.

⁴²TAYLOR, P. 1983. Wings along the Winnipeg. The birds of the Pinawa-Lac du Vinet region, Manitoba. Man. Naturalists Series 2, Winnipeg, MB. 223 pp.



SASKATCHEWAN NATURAL HISTORY SOCIETY
BOX 4348, REGINA, SASKATCHEWAN S4P 3W6
(306) 780-9273

BLUE JAY BOOKSHOP
BOX 1121, REGINA, SASKATCHEWAN S4P 3B4

BOARD OF DIRECTORS OFFICERS

Executive President	Frank Brazier	2657 Cameron St., Regina, S4T 2W5
President	Lloyd Saul	213-431 Wollaston Cres., Saskatoon S7J 4G9
Vice-President	Lorne Rowell	Box 639, Ft. Qu'Appelle S0G 1S0
Executive Vice-President	Hamilton Greenwood	Box 3003, Prince Albert S6V 6G1
President	Frank Switzer	1301 Shannon Rd., Regina S4S 5K9
President		Currently vacant
President		Currently vacant
President		Currently vacant

PRINTED DIRECTORS

Blue Jay Bookshop	Don McRobbie	705 9th Ave. N., Saskatoon S7K 2Y9
Blue Jay Editor	Sheila Lamont	Box 550, Raymore S0A 3J0
Blue Jay News	Bob Kohlmeier	708 9th Ave. N., Saskatoon S7K 2Y9
Representative	Mary Gilliland	902 University Dr., Saskatoon S7N 0K1
Representation	Jim Elliott	2258 Rae St., Regina S4T 2E9
Executive Chairman	Jim Slimmon	2526 Hanover Ave., Saskatoon S7J 1G1
Publications	Mary Gilliland	902 University Dr., Saskatoon S7N 0K1
Membership	Lloyd Saul	213-431 Wollaston Cres., Saskatoon S7J 4G9
Research & Initiatives	Merv Hey	104 Dunlop St., Saskatoon S7N 2B5
Director	Stan Shadick	3F-1800 Main St., Saskatoon S7H 4B3

REPRESENTATIVES AT LARGE

Herriot		3027 Whitmore Ave., Regina S4S 1B7
James		2350 Garnet St., Regina S4T 3A2
Bordass		R.R. 1, Leross S0A 2C0
Hirns		Box 7, Lebret S0G 2Y0
Harstad		Box 1878, Nipawin S0E 1E0
Ed Gollop		2202 York Ave., Saskatoon S7J 1J1
Christiansen		Box 1005, Nipawin S0E 1E0
Wait		1008 Gray Ave., Moose Jaw S6H 1N3
Lyon		Box 1383, Indian Head S0G 2K0
Meichel		404-5th St. E., Saskatoon S7H 1E9
Hagel		Box 129, Choceland S0J 0M0

REGIONAL DIRECTORS

Truise		1204 Hochelaga W., Moose Jaw S6H 2J4
Hooper		Box 40, Somme S0E 1N0
McMaster		306 Brock St., Winnipeg, MB R3N 0Y9
Lepp		11 Dogwood Cres., Yorkton S3N 2M6
Bride		4-3507 Willowdale Cres., Brandon, MB R7B 3C5
Elanger		412 McGillvary Dr., Weyburn S4H 1M1
Pike		Box 117, Waseca S0M 3A0

MEMBERS OF LOCAL SOCIETIES

Appelle	Ronald Hooper	Box 757 S0G 1S0
Bay	Patricia Beaulieu	Box 1714 S0E 0X0
Head	Vic Beaulieu	Box 1213 S0G 2K0
	Phil Curry	Box 1115 S0E 1A0
Jaw	Richard Pickering	1320 Duffield St. W. S6H 5K4
Albert	Carman Dodge	219 MacArthur Dr. S6V 5X3
	Frank Switzer	1301 Shannon Rd. S4S 5K9
oon	Ron Jensen	1027 King Cres. S7K 0N9
rn	Dick Gutfriend	18-9th Ave. South S4H 1Z7
n	Warren Hjertaas	510 Circlebrook E Dr. S3N 2Y3
UTIVE DIRECTOR	Suzanne Henry	201 Dufferin Rd., Regina S4S 5B5

William Sarjeant
674 University Dr.
SASKATOON, SK
EXPIRY DATE 12/31/89

S7N 0J2



Second class mail registration number 10
Please return unclaimed copies.
Return postage guaranteed.

Box 4348, Regina, Saskatchewan S4P 3V

